

# EXHIBIT 91

UNITED STATES DISTRICT COURT  
DISTRICT OF VERMONT

JAMES D. SULLIVAN and LESLIE )  
ADDISON, WILLIAM S. SUMNER, )  
JR., RONALD S. HAUSTHOR, )  
GORDON GARRISON, and TED and )  
LINDA CRAWFORD and BILLY J. )  
KNIGHT, individually and on )  
behalf of a class of persons )  
similarly situated, )  
Plaintiffs, ) Civil Action No.  
5:16-cv-00125  
vs. )  
SAINT-GOBAIN PERFORMANCE )  
PLASTICS CORPORATION, )  
Defendant. )  
/

VIDEOTAPED DEPOSITION OF  
GARY THOMAS YODER, MS  
(Taken by Defendant)  
Raleigh, North Carolina  
Tuesday, February 6, 2018

Reported in Stenotype by:  
Judy F. Reins, RMR, CRR

APPEARANCES

ON BEHALF OF THE PLAINTIFFS:

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ALSO PRESENT:

Lyle Chinkin, Sonoma Technology  
Michael Kirby, Videographer

VIDEOTAPED DEPOSITION OF GARY THOMAS YODER,  
MS, a witness called on behalf of Defendant, before  
Judy F. Reins, RMR, CRR, and Notary Public, in and for  
the State of North Carolina, at the offices of Smith,  
Anderson, Blount, Dorsett, Mitchell & Jernigan LLP,  
150 Fayetteville Street, Suite 2300, Raleigh, North  
Carolina, on Tuesday, the 6th day of February 2018,  
commencing at 9:04 a.m.

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1 (EXHIBITS 1 AND 2 WERE MARKED FOR  
2 IDENTIFICATION)

3 THE VIDEOGRAPHER: We're on the record at  
4 9:04 a.m. This is the videotape deposition of  
5 Gary T. Yoder. This deposition is being held at  
6 Smith, Anderson, Blount, Dorsett, Mitchell &  
7 Jernigan, 150 Fayetteville Street, Suite 2300, in  
8 Raleigh, North Carolina, 27601, on February 6th,  
9 2018. Court reporter is Judy Reins.  
10 Videographer is Michael Kirby.

11 Would counsel please introduce themselves  
12 and whom they represent?

13 MR. CURRAN: Patrick Curran, Quinn Emanuel,  
14 for defendant Saint-Gobain.

15 MR. LoCASTRO: Nicholas LoCastro, Quinn  
16 Emanuel, for Saint-Gobain.

17 MR. DAVIS: Gary Davis for the plaintiffs,  
18 the Sullivan plaintiffs.

19 THE VIDEOGRAPHER: Would the court reporter  
20 please swear the witness?

21 GARY THOMAS YODER, MS,  
22 being first duly sworn, testified as follows:

23 MR. DAVIS: Before we start, can we show  
24 also present, please? Can you state your name,  
25 please?

1 MR. CHINKIN: Lyle Chinkin.

2 MR. DAVIS: Thank you.

3 EXAMINATION

4 BY MR. CURRAN:

5 Q. Mr. Yoder, can you please state your name  
6 for the record?

7 A. Gary Thomas Yoder.

8 Q. And, Mr. Yoder, you understand that  
9 you're -- you're under oath today?

10 A. I do.

11 Q. And you understand that that oath today is  
12 the same oath as if you were testifying in court?

13 A. I do.

14 Q. Is there any reason you can't give your best  
15 and most accurate testimony today?

16 A. No.

17 Q. You submitted an expert report in this case?

18 A. I did.

19 Q. And do you recognize that as what's been  
20 marked as Exhibit 1 here?

21 A. That is correct.

22 Q. And you also submitted a signed declaration  
23 in this case. Is that right?

24 A. Yes.

25 Q. And do you recognize that as what we'll mark

1 as Exhibit 2?

2 A. Yes.

3 Q. Take a look at Exhibit 2. You say there in  
4 your declaration of the report you've rendered in this  
5 case, Contains a complete statement of the opinions I  
6 will express on the issue of class certification and  
7 the basis and reasons for them as well as the facts or  
8 data I considered in forming these opinions.

9 That's at paragraph 3. Do you see that?

10 A. I do.

11 Q. Was that correct at the time you drafted  
12 your report?

13 A. Yes.

14 Q. And is that still true today?

15 A. Yes.

16 Q. Do you plan to offer any opinions that do  
17 not appear in your expert report?

18 A. No. I plan to be consistent with my expert  
19 report.

20 Q. And you've disclosed to us in your report  
21 all the opinions you plan to give in this case. Is  
22 that correct?

23 A. Yes.

24 Q. Is there anything in your report that you  
25 want to change or correct?



1 A. As it stands right now, no.

2 Q. And you understand that you are required to  
3 give all the bases for your opinions in your report.  
4 Correct?

5 A. Yes.

6 Q. And did you do that?

7 A. To -- yeah, to the most of the extent that I  
8 believe that was necessary for the type of report,  
9 yes.

10 Q. Did you ask for any information in the  
11 course of conducting your analysis that you didn't  
12 receive?

13 A. I seem to recall maybe asking for some air  
14 dispersion modeling data files maybe from the other  
15 engineering firm, but there was -- it wasn't  
16 available.

17 Q. Any other information you can think of that  
18 asked for that you --

19 A. Off the top of my head, no, no, most --  
20 everything was formulated from what was able -- what  
21 was provided to me, so I can't think of anything  
22 specifically other than that.

23 Q. So with the exception of the air modeling  
24 files, nothing else that you asked for and didn't  
25 receive before preparing and submitting your report.

1 Fair?

2 A. As -- as best as I -- I can recall, yes.

3 Q. About how much time did you spend preparing  
4 the report we've marked as Exhibit 1?

5 A. From beginning to submittal, probably three,  
6 four months, I guess, maybe total.

7 Q. And could you --

8 A. Trying to remember exactly when we were --  
9 when I got engaged in the project. I can't remember  
10 that specifically, but it was -- it was probably along  
11 that -- along those lines.

12 Q. For -- strike that.

13 Have you invoiced your time by the hour in  
14 this case?

15 A. Yes.

16 Q. Ballpark, how many hours do you believe you  
17 spent working on the report we've marked as Exhibit 1?

18 A. Maybe 75 to 100, I'm guessing. I didn't  
19 look at it before I came, so I'm just trying to  
20 recall.

21 Q. And how much time did you spend preparing  
22 for this deposition today?

23 A. Probably 12 hours, I guess.

24 Q. What did you do to prepare for today's  
25 deposition?

1           A.    I met with Gary and then had some time I  
2   prepared, you know, getting prepared before we met  
3   yesterday and a little bit after our meeting  
4   yesterday.

5           Q.    Other than Mr. Davis, did you meet with  
6   anyone else to prepare for today's deposition?

7           A.    No.

8           Q.    About how long did you meet with Mr. Davis  
9   to prepare for today's deposition?

10          A.    About seven hours, I guess.

11          Q.    And that was yesterday?

12          A.    That's correct.

13          Q.    And other than that meeting with Mr. Davis  
14   yesterday, what did you do to prepare for today's  
15   deposition?

16          A.    I just reviewed my report, Phil Hopke's  
17   report, some of the air dispersion modeling files,  
18   just, you know, modeling guidance documents, things  
19   like that.

20          Q.    Did you review any documents other than the  
21   documents you just identified to prepare for today's  
22   deposition?

23          A.    I'm trying to think if I maybe -- other than  
24   maybe some general AERMOD memorandums, maybe things  
25   like that, I can't think of anything specifically. I

1 mean, it was a couple things like that I maybe have  
2 looked at to kind of get some details on some things.

3 Q. You mentioned general AERMOD memorandums.  
4 What's an example of a general AERMOD memorandum?

5 A. So I say "general." Memorandum on a -- on  
6 a -- the version of AERMOD, latest version of AERMOD.  
7 I do remember looking at that, for an example.

8 Q. Anything else you can recall that you  
9 reviewed to prepare for the deposition?

10 A. No.

11 Q. I believe you brought a copy of your report  
12 and a copy of your declaration with you today. Can I  
13 ask, have you marked those up at all?

14 A. I didn't bring a copy of my declaration. I  
15 only got the one I got -- you -- you gave me. I did  
16 make some just notes here and there on my copy.

17 Q. So if we could mark as Exhibit 3 the  
18 annotated version --

19 MR. DAVIS: Let me look at it first.

20 THE WITNESS: Okay.

21 MR. DAVIS: Okay. She's going to mark it.

22 (EXHIBIT 1-A (initially marked as Exhibit 3)  
23 WAS MARKED FOR IDENTIFICATION)

24 BY MR. CURRAN:

25 Q. During the course of the deposition today,

1 I'll be referring to your report as Exhibit 1, but you  
2 can make reference to the annotated version,  
3 Exhibit 3, if you'd like.

4 A. Okay.

5 Q. Mr. Yoder, when were you first retained by  
6 plaintiff's counsel in this case?

7 A. And, again, I can't remember the specific  
8 date, but it was back in -- I honestly can't remember  
9 off the top of my head -- May, I'm thinking. I can't  
10 remember the exact date.

11 Q. And that's May of 2017?

12 A. Yes.

13 Q. Who first --

14 A. It may have been as early as April. I'm not  
15 sure.

16 Q. Who first contacted you about this case?

17 A. Actually Cathy Dare, TRM Environmental  
18 Consultants.

19 Q. And when Ms. Dare first contacted you, what  
20 did she describe the need was for in this case?

21 A. It was for a case in Bennington, Vermont,  
22 and that there was the need for air dispersion  
23 modeling services. And there was really wasn't a  
24 whole lot of information given at that time. I  
25 just -- she asked for my resumé, and I gave it to her,

1 and she provided it to counsel.

2 Q. That contact you had with Ms. Dare, is that  
3 your first engagement with TRM, or had you worked with  
4 them previously?

5 A. I -- I worked for an associate of hers who's  
6 with another consulting firm. She is -- so I think  
7 it's my -- yes, my first actual contract with TRM.

8 Q. And when did Ms. Dare or others explain to  
9 you the specific nature of the air modeling services  
10 you'd be asked to provide in this case?

11 A. Well, Ms. Dare really didn't. It was  
12 probably more along the lines of actually once we  
13 were, you know, actually engaged and under contract  
14 to -- to do the work, so it would have been after that  
15 with conversations with counsel.

16 Q. As part of your engagement in this case,  
17 were you asked to determine the source of PFOA air  
18 deposition for specific properties in the Bennington  
19 area?

20 A. Specific properties, can -- I'm not sure  
21 what you mean, so rephrase the question.

22 Q. As part of your engagement in this case,  
23 were you asked to determine what the source of PFOA  
24 deposition had been for specific sites in Bennington;  
25 for example, a specific property address?

1 A. Yes.

2 Q. And were you asked --

3 A. Just -- just to clarify my answer, to  
4 simulate PFOA emissions from a specific address.

5 Q. So you were asked to simulate emissions from  
6 a specific address?

7 A. Correct.

8 Q. Were you asked to give an expert opinion on  
9 the source of -- of PFOA emissions that had settled to  
10 a specific address?

11 A. No.

12 Q. Were you asked to model -- strike that.  
13 What is TRM?

14 A. They're -- it's a woman-owned consulting  
15 firm out of New York. Again, Cathy Dare is the -- the  
16 owner of the company, and just through working with  
17 her and -- and actually the gentleman that she used to  
18 work with in -- with another environmental firm up  
19 there in New York, they've -- they've come to me for  
20 some air support services, so I've known Cathy through  
21 that relationship.

22 Q. So what is your position at TRM?

23 A. I actually worked for the ClimeCo  
24 Corporation, so I'm contracted by TRM.

25 Q. And -- and what is ClimeCo?

1           A.     ClimeCo is a org project development  
2     company.   Primarily the services are in the world of,  
3     you know, again, developing projects for carbon  
4     offsets and -- and regulatory markets and voluntary  
5     markets, and regulatory being California, cap and  
6     trade programs in Canada, voluntary everywhere else  
7     outside of the regulated areas. That's primarily  
8     the -- the focus. We also do a lot of similar-type  
9     market services in non-attainment areas.

10          Q.     Before this engagement for TRM, had you  
11     worked with Dr. Hopke?

12          A.     Actually, yes.

13          Q.     And where did you work with Dr. Hopke?

14          A.     Again, through Cathy's association with  
15     another firm, the firms change, but Tim McAuley, Tim  
16     and -- and Dr. Holly (phonetic) have a long-term  
17     relationship, and there was a project that we worked  
18     on and that Phil, I believe, is giving some support in  
19     that particular project, too.

20          Q.     And do you recall, was there a name for that  
21     project? Was it litigation-related?

22          A.     It was -- it was a potential fracking  
23     sandpit in Pennsylvania, and I don't know if there was  
24     a specific name of the project. It was a -- I think a  
25     zoning board. I was just giving similar-type support,



1 air services to Tim who's actually doing the work in  
2 front of, you know, I guess the zoning board up there,  
3 so I don't know if there was actually a specific  
4 project name.

5 Q. And were you deposed in connection with that  
6 work?

7 A. No, not that project, no.

8 Q. Did you prepare a report in connection with  
9 that work?

10 A. I -- I -- no, I just supported him with  
11 some -- some services, some drawings, and things like  
12 that. No, I did not actually write a report for that  
13 particular service.

14 Q. You mentioned you were working there with,  
15 it was Tim McAuley?

16 A. Yeah.

17 Q. Were you also working with Phil Hopke on  
18 that?

19 A. I just know that Phil was involved in  
20 providing some support, but it -- it wasn't -- you  
21 know, I would maybe be on a call or something with him  
22 every once in a while, but it wasn't like he and I  
23 were exchanging information and, like, working  
24 together.

25 Q. About what time was that, 2015, 2014?

1 A. 2016, I think.

2 Q. Now, who, if anyone, at TRM helped you  
3 prepare the report you submitted in this case?

4 A. Cathy helped me mostly with -- you know, she  
5 put it in her format, some of the graphics, things  
6 like that, so it basically went through her.

7 Q. And what is Ms. Dare's background?

8 A. She is a civil engineer, I believe,  
9 primarily expertise in waste, solid waste, things like  
10 that --

11 Q. And what's her --

12 A. -- best I can answer.

13 Q. I'm sorry. What's her position at TRM?

14 A. I believe she's -- she is the -- the owner.  
15 I don't know if it's a sole proprietorship or an LLC.

16 Q. Anyone else that you worked with at TRM to  
17 prepare the report?

18 A. No. Well, Phil technically is associated  
19 with TRM too, so, I mean, he would be -- he was  
20 involved in -- in ...

21 Q. The intro to the report says, to accomplish  
22 the study objectives, TRM modeled the ChemFab  
23 emissions based on the documented operational  
24 conditions for the ChemFab production equipment.

25 MR. DAVIS: Where are you reading from?

1           Second paragraph. Can you direct him?

2       BY MR. CURRAN:

3           Q. Do you see that, sir?

4           A. Where is -- I'm sorry.

5           Q. Yeah, sure, the second paragraph.

6           A. Oh, yes.

7           Q. It says here, T -- TRM modeled the ChemFab  
8       emissions.

9                   Is that right?

10          A. Well, I was prepared, but I -- I did the  
11       modeling, so TRM, and I just -- and I was contracted  
12       by TRM, so.

13          Q. So other than yourself, anyone else at TRM  
14       or otherwise involved in the modeling of this?

15          A. No.

16          Q. Okay. At the top of the report here, it  
17       says, Attorney/client work product, confidential.

18                   Did you add that to the report?

19          A. I believe Cathy did.

20          Q. Did any attorneys draft any portion of this  
21       report?

22          A. No.

23          Q. You've been involved in litigation before  
24       this case?

25          A. No.

1 Q. Have you been deposed before?

2 A. No.

3 MR. DAVIS: Let me -- let me just object.

4 I'm -- it's not really an objection. I think he  
5 might not have understood what you meant about  
6 litigation. I mean --

7 THE WITNESS: Oh.

8 MR. DAVIS: -- you've been in administrative  
9 hearings. Right?

10 THE WITNESS: Yes, sorry. I thought you  
11 meant in this particular setting. So I've been  
12 to two zoning board hearings, sorry, and provided  
13 expert reports in those and testified, I guess,  
14 at a zoning board hearing, but I was not deposed.

15 BY MR. CURRAN:

16 Q. So let me break that down a bit.

17 A. Sure.

18 Q. In terms of litigation in a courtroom,  
19 putting aside administrative proceedings, have you  
20 ever been involved in litigation before?

21 A. So if that's not included, then no.

22 Q. And putting aside the zoning board hearings,  
23 have you ever been involved in a deposition before?

24 A. No.

25 Q. So the testimony that you provided has been

1 in administrative hearings to zoning boards?

2 A. That's correct.

3 Q. How many times have you done that?

4 A. Twice.

5 Q. And when were those?

6 A. 2015, 2016.

7 Q. Aside from the zoning board hearings in 2015  
8 and 2016, any testimony you've given to a government  
9 agency or to a court?

10 A. No.

11 Q. What was the nature of the disputes that you  
12 were providing testimony for in those two-zoning board  
13 meetings?

14 A. Yeah, the first one was North Carolina. It  
15 was an existing zoned property, agricultural, I  
16 believe, across the street from an established  
17 community, golf course. And the -- I was supporting  
18 the plaintiff attorney to fight rezoning that property  
19 for a gravel pit and just provided general air  
20 compliance, you know, air impact services.

21 Q. And how about the second dispute?

22 A. The second one was another zoning board  
23 hearing in Pennsylvania for a proposed fracking well,  
24 and the environmental report that was submitted by the  
25 company, the energy firm that was going to install the

1 fracking well as to whether it met the environmental  
2 compliance requirements of the zoning ordinances from  
3 an air -- from an air standpoint.

4 Q. Sir, in your declaration, going to  
5 paragraph 3 --

6 MR. DAVIS: Exhibit 2.

7 BY MR. CURRAN:

8 Q. Here in paragraph 3 it says that your expert  
9 report contains a complete statement of the opinions I  
10 will express on the issue of class certification and  
11 the basis and reasons for it.

12 Is that right?

13 A. Yes.

14 Q. As used in your declaration, how do you  
15 define the term "the issue of class certification"?

16 A. How do I define "the issue of class  
17 certification"?

18 Q. Yes, sir.

19 A. Well, I'm not an attorney, so as I  
20 understand it, it's an application process for a  
21 potential class action lawsuit, and so the -- the  
22 certification process, I guess, to whether the suit  
23 should proceed, I guess, is my general understanding.

24 Q. Do you intend to offer any opinions in this  
25 case on issues other than class certification as

1 expressed in your report marked as Exhibit 1?

2 A. No.

3 Q. Turn to page 7 of your report that's  
4 Exhibit 1. It lists nine citations. Correct?

5 A. Oh, I'm sorry. Got the wrong page. Yes.

6 Q. And you relied on these nine cited materials  
7 when you were forming your opinions in this case. Is  
8 that right?

9 A. I did to some portion or part from them,  
10 yes.

11 Q. Are there any other documents that you  
12 relied on that are not listed --

13 A. Yes, and -- yeah, in going through the  
14 process yesterday, I realized I'm just adding one of  
15 these, was the Alliance Technologies. Yeah, I just  
16 scribbled roughly the title. Like Alliance  
17 Technologies, April 1992, was something that I should  
18 have included in -- in the citations.

19 Q. So other than that Alliance Technologies  
20 document from 1992, any other materials that you  
21 relied on that are not listed on page 7?

22 A. As best of my knowledge, no, I believe that  
23 I have them listed here.

24 Q. Are there any materials that you considered  
25 but decided not to rely on --

1 A. Oh, boy.

2 Q. -- from your report that are not listed  
3 here?

4 A. I mean, there probably is, but to tell you  
5 which ones they are, I -- I'm not sure that I can off  
6 the top of my head.

7 MR. DAVIS: State -- state for the record  
8 that we provided those documents to the defendant  
9 and so.

10 BY MR. CURRAN:

11 Q. So best of your recollection, what were the  
12 documents you considered but did not rely on?

13 A. Well, there was a lot of -- I mean, there  
14 was a lot of documents on historical -- you know, the  
15 Vermont DEC documentation on, you know, inspection  
16 records, odor complaints, things like that, coming off  
17 the top of my head are some of those that I've looked  
18 at, but it really didn't have a bearing on what I was  
19 doing here with this particular ...

20 Q. And so why did you decide not to rely on  
21 those materials?

22 A. Well, just specifically what I was trying to  
23 accomplish here with, you know, doing a deposition  
24 analysis, it really -- other than the information I  
25 collected from some of those documents that I listed



1 here, like air permits and things like that, which, by  
2 the way, I could maybe -- if I can revise my -- my  
3 last statement on the citations here, there is an air  
4 permit document that I -- should also be listed here  
5 too where I got information from -- for stacks and  
6 building heights and things like that, and so that --  
7 that should also be included. And I believe it was  
8 provided to you guys, but I -- it should be listed  
9 here also.

10 There was -- there was some air permit  
11 documents that had information on building -- building  
12 dimensions, stack locations, volumetric flow rates,  
13 the process rates, and things like that that I did  
14 rely on, and it -- it's -- should be listed here also.

15 Q. Other than those permitting documents and  
16 the Alliance report that you mentioned, anything else  
17 that you relied on that isn't listed on page 7?

18 A. I mean, there was some -- probably some  
19 technical journal article -- journal articles that we  
20 passed around that I just, you know, reviewed, again,  
21 maybe not specifically pulled information from or used  
22 for this report. So, I mean, there is another  
23 possibility of some -- some other documents, yes.

24 Q. One of the things that is not identified  
25 here is the -- the Barr Engineering conceptual site

1 model. Did you review that model in connection --

2 A. I did.

3 Q. -- with your report?

4 And did you decide not to rely on that?

5 A. Yeah, yeah, I didn't really rely on it for  
6 anything as far as my input and what I used for my  
7 analysis, but yes, I did review that.

8 Q. And why did you decide not to rely on the  
9 Barr Engineering report?

10 A. Mostly because the approach was to -- to do  
11 my own analysis, to -- you know, to just -- well,  
12 wait, I did compare, but I didn't actually pull any  
13 information from it for what I -- for what I did in my  
14 analysis.

15 Q. Do you recall what versions of the Barr  
16 report you --

17 A. Yeah, it was the last -- specifically, I  
18 think the last one, which was -- was it June 2017, if  
19 I'm not mistaken. So the one before that initially,  
20 and then the -- the June 2017 in Appendix A that came  
21 with that conceptual model report.

22 Q. And do you recall, did your opinions change  
23 after you reviewed any different iterations of the  
24 Barr report?

25 A. No, no.

1 Q. Skip a little bit over, background here.

2 A. Okay.

3 Q. Tell me about your educational background.

4 You have a Master's degree in meteorology?

5 A. Yes, I do.

6 Q. Would you say that your expertise relates to  
7 meteorology?

8 A. I would say my expertise really is more in  
9 the world of air compliance work, I mean, based on how  
10 my career has gone at this point.

11 Q. Uh-huh.

12 A. I'm several years removed from, you know,  
13 studying meteorology.

14 Q. So I'll come back to that in a second,  
15 but --

16 A. Okay.

17 Q. -- you'd agree, you're -- you're not a  
18 trained chemist. Correct?

19 A. That's correct.

20 Q. You're not a hydrogeologist?

21 A. I am not.

22 Q. You're not an engineer?

23 A. No.

24 Q. And you're not a toxicologist?

25 A. No.

1 Q. You're not an epidemiologist?

2 A. No.

3 Q. The opinions that you're offering in this  
4 case are limited to the field of air emissions  
5 modeling. Is that fair?

6 A. That's correct.

7 Q. You did not attempt to determine where, if  
8 anywhere, PFOA was transported after it had traveled  
9 from the air to the ground. Is that fair?

10 A. No.

11 Q. And you did not attempt to determine the  
12 effectiveness of any pollution control technology in  
13 this case. Correct?

14 A. No.

15 Q. And you didn't attempt to determine whether  
16 PFOA is or is not potentially harmful to human health.  
17 Correct?

18 A. I did not.

19 Q. So would you describe your expertise as air  
20 modeling?

21 A. Yes.

22 Q. And where did you get your training in air  
23 modeling?

24 A. Initially when I started my career, I went  
25 through a training course with Trinity Consultants, I

1 believe it was, back in, we're talking 1992, '3 was  
2 the initial training. And then it was probably from  
3 there just a series of, you know, workshops, you know,  
4 conferences, things like that, EPA training that they  
5 make available to the public, anything else that may  
6 have been published as public -- public domain  
7 information.

8 And then from there, just, you know,  
9 obviously I'm working with a gentleman call -- named  
10 Kevin Eldridge, who was a meteorologist also that  
11 worked for the State at one time and worked for the  
12 firm that I worked for initially and hired me.

13 Q. You mentioned EPA training and workshops and  
14 conferences. What EPA conferences have you attended?

15 A. You have the -- try -- trying to remember  
16 the name of them now. It's like once every five years  
17 they have a -- a national meeting where the primary  
18 topic is air dispersion modeling. They've had -- I  
19 don't even know how many they've had now. I've gone  
20 to one of those in Washington, D.C.

21 And I was at -- this past spring, I was at  
22 the State -- the State EPA workshop in Chapel Hill,  
23 North Carolina, which basically they have -- they  
24 discuss recent changes or proposed changes within  
25 AERMOD or -- or actually several models, so I've gone

1 to those.

2 Carolinas Air Pollution Control Association  
3 conference, which is twice a year, although there's --  
4 likely there isn't much in the way of air dispersion  
5 modeling discussed at those anymore. Maybe back in  
6 the early days it was -- was a little bit more of a  
7 hotter topic and ...

8 Q. Have you presented at those conferences?

9 A. I have presented those -- at those  
10 conferences, yes -- well, at the -- at Carolinas Air  
11 Pollution Control Association conference, yes.

12 Q. What subject did you present on?

13 A. One was on class 1 impacts, and that's going  
14 back to -- boy, trying to remember that year. That  
15 was related to -- to air dispersion modeling, but it  
16 wasn't specifically into the details of air dispersion  
17 modeling. The second one was an ambient sampling  
18 program we did for toluene dust cyanine from foam  
19 manufacturing operations, but it wasn't air dispersion  
20 modeling related.

21 Q. And I understand there's a -- what's  
22 sometimes called an Appendix W conference that's held  
23 close to here?

24 A. Yes.

25 Q. What is the Appendix W conference?

1           A.     That's -- that's the one I went to in Chapel  
2 Hill.

3           Q.     Okay.

4           A.     Thank you. So you helped me out with  
5 answering that question. So -- but, yeah, they --  
6 they basically discussed -- or either -- either  
7 accepted changes to Appendix W or maybe ones that may  
8 be coming down the road, future changes with all --  
9 you know, several models of Appendix W.

10          Q.     What is EPA's Appendix W?

11          A.     It's -- basically it's the published  
12 promulgated guidance for -- well, for states -- it's  
13 really for state implementation plans, states, and I  
14 suppose tribes and things like that, for their guides  
15 and basically how -- through state implementation  
16 plans, how to comply with the national ambient air  
17 quality standards, I think particularly when it comes  
18 to new source review regulations or prevention of  
19 significant deterioration and things like that.

20          Q.     Is Appendix W considered best practices in  
21 the air modeling industry for -- for running an air  
22 dispersion model?

23          A.     Yes.

24          Q.     Did you apply Appendix W to your report in  
25 this case?

1 A. Yes.

2 Q. I believe in your report you say that you  
3 followed Appendix W, and you referenced the 2005  
4 version?

5 A. Yes, that's -- that should be probably 2017.  
6 There's a new version.

7 Q. So what about -- so in your mind, no  
8 difference between the 2017 protocol and what you  
9 followed?

10 A. Well, there is, but to what I did here, I  
11 mean, no, no, it didn't affect anything between those  
12 two versions.

13 Q. And why -- why did you follow the guidance  
14 in Appendix W?

15 A. It's basically standard protocol in what  
16 I've been doing my career when I do prepare analyses  
17 like this, particularly it's associated with some kind  
18 of review from a regulatory agency in that they would  
19 require you to follow Appendix W. So it's just --  
20 really today, it's kind of out of habit more than  
21 anything.

22 Q. Someone in the field, if you saw a report  
23 that didn't follow Appendix W, would you say that that  
24 didn't follow the best practices in the field?

25 A. Well, I guess it depends, and it depends on



1     what the nature of the analysis is. There could be a  
2     need for doing something very unique.

3           Q.     In this case, you didn't deviate from  
4     Appendix W, correct?

5           A.     As -- yeah, as best I could, I followed  
6     those guidelines.

7           Q.     Can you think of any situations in which you  
8     didn't follow the Appendix W guidelines?

9           A.     No, I'm -- no.

10          Q.     You intended to --

11          A.     Not purposely anyway.

12          Q.     You intended to follow the Appendix W --

13          A.     Yes.

14          Q.     -- guidelines in this case? And you didn't  
15     identify any situations that would call for deviating  
16     from the Appendix W guidelines in this case?

17          A.     No.

18          Q.     Now, Section 833 of the Appendix W  
19     guidelines -- see if we can get a copy of those --

20                 MR. DAVIS: Yeah, I'm going to object unless  
21     you provide a copy to the witness.

22                 MR. CURRAN: You can have your objection,  
23     so.

24     BY MR. CURRAN:

25           Q.     Tell me what Appendix W says to do about

1 multisource emission scenarios.

2 A. I don't know that. I'd have to look it up.  
3 I don't know it off the top of my head. Appendix W is  
4 huge.

5 Q. Uh-huh. In this case, did you model a  
6 single source or a multisource emission model?

7 A. I call it a single source based on my  
8 definition.

9 Q. And what's --

10 A. It's a single facility.

11 Q. I'm sorry, I spoke over you. What's your  
12 definition?

13 A. A single facility.

14 Q. When you say you model, "it's a single  
15 facility," what do you mean by that?

16 A. Well, I guess in some cases you could have  
17 more of a complex of sources, you know, much larger  
18 chemical plants or maybe in a contiguous property you  
19 have multiple operations that could be separated,  
20 maybe two facilities located in close proximity,  
21 completely separate from each other but -- but emit  
22 the same compound and have to be modeled together.

23 Q. It's important when conducting air  
24 deposition models to determine the appropriate  
25 background concentrations of a substance. Right?

1 A. Yes.

2 MR. DAVIS: Object to -- object to the  
3 question, form of the question. You may answer.

4 THE WITNESS: I'm sorry?

5 MR. DAVIS: You may answer the question.

6 THE WITNESS: Okay, I'm sorry.

7 BY MR. CURRAN:

8 Q. Pause for a second. This is -- this is your  
9 first deposition?

10 A. Yeah.

11 Q. During the course of the day, you may hear  
12 objections from counsel.

13 A. Okay.

14 Q. You are still required to answer the  
15 question --

16 A. Okay.

17 Q. -- even if there is an objection.

18 A. All right.

19 Q. Does that make sense?

20 A. Yes.

21 Q. Okay. It's important in conducting air  
22 dispersion modeling to determine the appropriate  
23 background concentration of the substance you're  
24 trying to model. True?

25 MR. DAVIS: Same objection.

1                   THE WITNESS: It would depend on the  
2                   compound that you're modeling.

3           BY MR. CURRAN:

4           Q.    Is it your testimony that for some  
5           compounds, it's not important to determine the  
6           appropriate background concentration of that  
7           substance?

8           A.    Yes.

9           Q.    Why is that?

10          A.    Because it could be a compound that, for  
11          example, is state toxic that doesn't have a background  
12          concentration requirement to be added in, like in  
13          North Carolina, toluene.

14          Q.    You'd agree that under Appendix W, you're  
15          instructed to determine the appropriate background  
16          concentration for substances before modeling though.  
17          Fair?

18          A.    I -- begin, for modeling a standard national  
19          ambient air quality standard pollutant, yes.

20          Q.    Did you attempt to determine the background  
21          concentration for PFOA in this case?

22          A.    No.

23          Q.    Why is that?

24          A.    As far as I know, there's no -- you know,  
25          background data comes from EPA state monitoring

1 networks and, as far as I know, the air monitoring  
2 PFOA.

3 Q. So for your analysis, it wasn't important to  
4 determine the background concentration of PFOA?

5 A. No.

6 Q. For your analysis, was it important to  
7 determine whether there were other potential sources  
8 of PFOA in the area?

9 A. No.

10 Q. Why is that?

11 A. I just wanted to determine what the  
12 deposition impact, contours, area, rate for one  
13 facility.

14 Q. And why did you want to limit your analysis  
15 to just one facility?

16 A. Because it was a source of PFOA emissions,  
17 known PFOA emissions.

18 THE COURT REPORTER: I'm sorry, what PFOA  
19 emissions?

20 THE WITNESS: PFOA -- known PFOA emissions,  
21 sorry.

22 BY MR. CURRAN:

23 Q. Did you consider whether this area of  
24 Bennington, Vermont, was a single source area or a  
25 multisource area for PFOA?

1           A.     I did not, no.

2           Q.     And why did you decide not to consider that  
3     issue?

4           A.     Based on the understanding that we had a  
5     source of -- a significant source of PFOA from a  
6     facility, historical emissions of PFOA emissions, we  
7     wanted to look at what that facility's potential  
8     impact or impact would be from their emissions only.

9           Q.     When you say, "we wanted to look at," who are  
10    you referring to as "we"?

11          A.     When I say "we," I say our -- our plaintiff  
12    team.

13          Q.     So the plaintiffs' attorneys and yourself  
14    collectively decided that you would look at a single  
15    source rather than a multisource for your modeling  
16    analysis. Fair?

17          A.     That's correct.

18          Q.     Now, under Appendix W, in multisource areas,  
19    determining the appropriate background concentration  
20    before model also involves identification and  
21    characterization of contributions from nearby sources  
22    through explicit modeling. Does that sound familiar?

23               MR. DAVIS: Again, I'm going to object  
24               unless you provide Appendix W to the witness to  
25               look at. You're quoting, you're reading from

1 something. He needs to be able to see it.

2 BY MR. CURRAN:

3 Q. You can answer the question.

4 MR. DAVIS: No, you can't unless you provide  
5 him the information. Don't answer until he  
6 provides you the information to look at.

7 MR. CURRAN: I'm asking the witness if he  
8 recalls from Appendix W if this is the correct --

9 THE WITNESS: I mean, I --

10 MR. CURRAN: -- methodology.

11 THE WITNESS: -- I don't recall. I don't  
12 have Appendix W memorized.

13 BY MR. CURRAN:

14 Q. Well, I'm going to ask it based on your  
15 education, training, and your understanding that you  
16 apply to Appendix W. Did you in this case identify  
17 and characterize contributions from nearby sources  
18 through explicit modeling?

19 A. No.

20 Q. Why did you decide not to do that?

21 A. Because it wasn't a standard national  
22 ambient air quality compound that I was modeling, a  
23 federal compound, federally-regulated compound --

24 Q. So can you --

25 A. -- at this -- at this particular time.

1 Q. In your opinion, it's only important to  
2 determine and identify and characterize contributions  
3 from nearby sources through explicit modeling for  
4 federally regulated compounds?

5 A. According to Appendix W, that -- that is  
6 what Appendix W is providing direction on.

7 Q. Why does the distinction between a federally  
8 regulated compound and an unregulated compound matter  
9 from a scientific perspective? As a scientist, to  
10 you, why is that an important distinction?

11 A. Well, because there's a process before a  
12 compound becomes regulated, and understanding may not  
13 have been gathered on a particular compound before it  
14 was regulated. It can obviously change over time when  
15 more information becomes available, and then it may  
16 eventually become a regulated compound where they may  
17 require providing -- you know, that you provide --  
18 include background data.

19 Q. For an accurate air dispersion model for a  
20 particular substance in a multisource area, you'd  
21 agree that you need to explicitly model each of those  
22 sources. True?

23 A. Well, again, it depends on what you're  
24 trying to accomplish with your analysis.

25 Q. Were you trying to accomplish an accurate



1 model in this case?

2 A. I was.

3 Q. So for an accurate air dispersion model for  
4 a particular substance in a multisource area, you'd  
5 agree that you need to explicitly model each of those  
6 sources. True?

7 A. Okay. Repeat the question. I'm trying to  
8 understand, so.

9 Q. For an accurate air dispersion model for a  
10 particular substance in a multisource area, you'd  
11 agree that you need to explicitly model each of those  
12 sources?

13 A. And, again, it depends on the compound that  
14 you're modeling. In cases I could -- there are cases  
15 I would have multi sources of a particular compound  
16 and would not have to include other sources.

17 Q. Why wouldn't you include other sources for  
18 an accurate air dispersion model?

19 A. In -- in some cases, it's -- it depends on  
20 the -- the goal of the analysis as to why you're doing  
21 it.

22 Q. What was your goal here?

23 A. To look at the impact specifically from the  
24 ChemFab operations, historical emissions.

25 Q. Your goal here was only to consider the

1 impact of a single emission source that you  
2 identified. Is that accurate?

3 A. That's correct.

4 Q. And you offer no opinion as to whether  
5 that's an accurate depiction of air dispersion impacts  
6 in a multisource environment. True?

7 A. I -- I -- I can't comment on that because I  
8 don't know about the other sources from an air  
9 dispersion modeling standpoint.

10 Q. And you didn't consider any other sources  
11 from an air dispersion modeling standpoint?

12 A. That is correct.

13 MR. DAVIS: Object. Let me object to the  
14 question. There's been no proof of any other  
15 sources.

16 MR. CURRAN: I'm just going to object now to  
17 any further speaking objections. I've tried to  
18 give some latitude, Gary, but that's not a form.  
19 That's a speaking objection.

20 MR. DAVIS: Object to the form of the  
21 question and the form of your comment.

22 MR. CURRAN: So the record's clear.

23 BY MR. CURRAN:

24 Q. If you knew that Saint-Gobain was not the  
25 only source of air emissions for PFOA in this area,

1 how would that have changed your analysis?

2 A. Again, if I was to determine and asked in --  
3 as part of the goal of determining what the impact was  
4 specifically from Saint-Gobain, I don't think it would  
5 have changed it.

6 Q. So if you understood that Saint-Gobain was  
7 not the only source of PFOA --

8 A. Well, I had understood -- I'm sorry,  
9 probably shouldn't -- go ahead. Sorry.

10 Q. No. Go ahead.

11 A. I was just going to say, what I wanted to  
12 clarify what I understood, though, at the beginning  
13 was that there wasn't any other air emission sources.

14 Q. What's the basis for your understanding that  
15 there are no other air emission sources for PFOA in  
16 the Bennington area?

17 A. And, again, I did not do that part of the  
18 analysis. It was based on information that was  
19 provided or -- or discussed and what -- what was --  
20 the team was doing as far as an overall assessment of  
21 other sources.

22 Q. So --

23 A. And as I understood, there wasn't anything  
24 significant as far as PFOA emission sources in -- in  
25 the area.

1 Q. Who informed you that there were no other  
2 sources of PFOA air emissions in the Bennington area?

3 A. I don't specifically recall. I think that  
4 Cathy helped with some of that. I think some -- I  
5 think some of the -- Ed -- hope I get his last name  
6 right -- Hinkey -- no, Hinchey. I'm sorry, his last  
7 name. Ed and Don, they did a little bit of work in  
8 that area too, I believe. So there was kind of a team  
9 effort. I did not do any work in that area and  
10 actually went to look for other air emission sources  
11 and so on.

12 Q. So you -- you have not conducted any  
13 investigation to determine if there are other air  
14 emission sources for PFOA in the Bennington area?

15 A. Me personally, no, I have not.

16 Q. And is it your opinion that Saint-Gobain's  
17 the only company that's ever used PFOA in this -- in  
18 the Bennington area?

19 A. I mean, it's -- we used it how? I mean, as  
20 far as manufacturing? As far as I know, at -- at  
21 those quantities, that they are the only one, yes.

22 Q. My question's a little different, sir. Are  
23 you offering the opinion that Saint-Gobain is the only  
24 company to use PFOA in the Bennington area for the  
25 last 24 years?

1           A.    No, I'm not providing -- I'm not saying  
2   that.

3           Q.    And are you aware that other companies have  
4   used substances containing PFOA?

5           A.    I mean --

6           MR. DAVIS:  Objection to the form of the  
7   question.  It assumes facts not in evidence.

8           THE WITNESS:  So --

9           MR. CURRAN:  Again, I'm going to object to  
10   the speaking objection.  Go ahead.

11          MR. DAVIS:  That's not a speaking objection.  
12   It's a valid objection.

13          THE WITNESS:  So rephrase the question for  
14   me, please.

15   BY MR. CURRAN:

16          Q.    Are you aware that other companies have used  
17   substances containing PFOA in the Bennington area over  
18   the last three decades?

19          A.    I believe I did -- I believe there may have  
20   been some -- some form or another or some quantity or  
21   another, yes.

22          Q.    So why did your model assume that  
23   Saint-Gobain is the only potential source for PFOA in  
24   the air in Bennington?

25          A.    Because it was just -- my goal was to

1 just -- to determine what the deposition rates were  
2 specifically from PFO -- from ChemFab, Saint-Gobain.

3 Q. And just to make sure I understand this, if  
4 you knew that Saint-Gobain was not the only source of  
5 PFOA air emissions in the Bennington area, you would  
6 not have made any changes to your model?

7 MR. DAVIS: Objection to the form of the  
8 question.

9 THE WITNESS: So rephrase the question for  
10 me, please.

11 BY MR. CURRAN:

12 Q. If you knew that Saint-Gobain was not the  
13 only source of PFOA emissions in the Bennington area,  
14 it's your testimony that you would not have made any  
15 changes to your model?

16 A. If -- were they the only air emission  
17 source, I mean, emitting PFOA to the atmosphere?  
18 Again, I -- I don't know. I'd -- I'd have to -- to  
19 think about that, but as far as I know, I -- if I'm --  
20 my goal was to determine what a specific facility's  
21 deposition rates were or concentrations or anything,  
22 then I only model that facility. Based on those  
23 results and maybe other circumstances, somebody may  
24 want to include other sources, but that wasn't part of  
25 this analysis.

1 Q. Have you ever published a paper where you  
2 did not model all sources for a particular compound --

3 A. Yes, many times.

4 Q. -- in an area?

5 A. Yes.

6 Q. Let me just finish the question.

7 A. Sorry.

8 Q. Strike that. Have you ever published a  
9 paper on an air dispersion model that did not model  
10 for all sources of that compound in a given area?

11 A. When you say, "published a paper," I mean,  
12 I'd assume -- do you mean something like in a journal  
13 article or something like that or?

14 Q. Start with a journal.

15 A. No, not in any journals.

16 Q. Have you -- have you ever published a paper  
17 in a peer-reviewed journal?

18 A. Yeah, not -- no, nothing like that in a -- a  
19 peer-reviewed journal.

20 Q. And have you ever submitted a -- what you  
21 consider to be a reliable air dispersion model for  
22 permitting purposes --

23 A. Yeah.

24 Q. -- that only model a single source of  
25 emissions for a compound in an area that you knew had

1 multiple sources of that compound?

2 A. Yes.

3 Q. When was that?

4 A. It was probably within the past six months  
5 for North Carolina air toxics permitting.

6 Q. And why did you only model a single source  
7 of emissions if it was a multisource area?

8 A. Their regulations give me that latitude.

9 Q. And when regulations give you the latitude,  
10 you decided it was scientifically acceptable to only  
11 model a single source?

12 A. The -- the State of North Carolina, when  
13 they -- if they think there is an issue with a  
14 particular compound in multi sources, perform those  
15 analyses.

16 Q. And if the court in this case determines  
17 that a single source analysis is -- is not sufficient  
18 and the multisource analysis is required, you're not  
19 offering any opinions on a multisource analysis.

20 Correct?

21 MR. DAVIS: I object to the question. I  
22 think that's an improper question and you're  
23 asking him to speculate about what the court  
24 might do.

25 MR. CURRAN: We'll again --



1 MR. DAVIS: Please don't speculate.

2 MR. CURRAN: -- ask counsel to cease from  
3 speaking objections.

4 MR. DAVIS: That's not a speaking objection.  
5 That's a valid objection. You may answer if you  
6 can.

7 THE WITNESS: Yeah, I agree, I don't -- I  
8 don't know how to answer based on what the court  
9 might do.

10 BY MR. CURRAN:

11 Q. And prior to being contacted by plaintiffs'  
12 counsel earlier in 2017, had you ever been involved  
13 with any work or research relating to PFOA?

14 A. No.

15 Q. You never lectured or published any  
16 materials relating to the detection of PFOA air  
17 emissions. Is that fair?

18 A. That is fair, no.

19 Q. And prior to this case, you've never been  
20 involved in any work to try and identify what kinds of  
21 methods or analytical techniques exist to detect PFOA  
22 air emissions. Is that fair?

23 A. No.

24 Q. Prior to this case, you haven't been  
25 involved in any work to try and identify what kinds of

1 methods or techniques exist to detect PFOA  
2 concentrations in stack exhaust?

3 A. No.

4 Q. Part of this case, you haven't been involved  
5 in any work to try to identify what kinds of methods  
6 or analytical techniques existed to detect PFOA  
7 concentrations in the atmosphere.

8 A. No.

9 Q. True? So fair to say the first time you  
10 worked on any project involving PFOA air emissions was  
11 after you were retained by plaintiffs' counsel in this  
12 case?

13 A. That is correct.

14 Q. And is it accurate to say that the first  
15 time you worked on a project involving the  
16 identification of probable off-site footprint for PFOA  
17 deposition was after you were retained by plaintiffs'  
18 counsel in this case?

19 A. Can you repeat the question, please?

20 Q. Sure. Is it accurate to say that the first  
21 time you worked on a project involving the  
22 identification of the probable off-site footprint of  
23 PFOA deposition was after you were retained by  
24 plaintiffs' counsel in this case?

25 A. Yes.

1           Q.    Fair to say that the first time you worked  
2   on a project involving the assessment of PFOA air  
3   emissions --

4           A.    Yes.

5           Q.    -- was this case?

6           A.    Yes, sir.

7           Q.    And prior to your work in this case, had you  
8   ever studied any kind of emission rate from a facility  
9   that coated fabrics with PTFE?

10          A.    I do not believe so, no.

11          Q.    And prior to your work in this case, had you  
12   ever quantified emission rates from a facility that  
13   coated fabrics with PTFE?

14          A.    No.

15          Q.    What are the steps that you took to  
16   familiarize yourself with PFOA in the period between  
17   when you were first retained on this case and when you  
18   submitted the report marked as Exhibit 1?

19          A.    Document review, historical document review,  
20   technical report review, reading, Google searches I'm  
21   sure here and there, a standard review of -- of  
22   technical journal articles and -- and historical  
23   documents which related to the facility.

24          Q.    Are there any papers or publications or  
25   materials regarding PFOA that you considered but

1 decided not to rely on in this case?

2 A. Well, I'm sure I -- there is a couple that  
3 were -- were going around that just, I didn't see them  
4 apply, and then to tell you what they are, it wasn't  
5 anything that was pertaining to what I was doing here,  
6 but I -- I can't recall what they were.

7 Q. Have you studied catalytic abatement  
8 pollution control technology?

9 A. I have.

10 Q. And what have you -- sorry. In your own  
11 words, what all would you say you've studied --

12 A. Well, I was going to ask you what you mean  
13 by "studied." I'm just familiar with the technology  
14 and have seen it applied.

15 Q. So what's the basis for your familiarity  
16 with the technology?

17 A. Just standard air permitting work with the  
18 different facilities that apply the technology.

19 Q. Have you ever studied the ability of  
20 catalytic abatement pollution control technology to  
21 remove perfluorinated chemicals from emission streams?

22 A. No, no.

23 Q. Have you ever published about the  
24 effectiveness of catalytic abatement pollution control  
25 technology?

1           A.     No.

2           Q.     Have you ever provided any consulting  
3 services regarding catalytic abatement pollution  
4 control technology?

5           A.     I have.

6           Q.     And what's the nature of those services?

7           A.     I typically see them installed on internal  
8 combustion engines for carbon monoxide control.  
9 That's mostly probably my most recent work that I've  
10 dealt with catalytic control technologies.

11          Q.     And none of that work has been with  
12 perfluorinated chemicals?

13          A.     No, no.

14          Q.     And so in connection with your report in  
15 this case, have you done any work to familiarize  
16 yourself with the ability of catalytic abatement  
17 pollution control technology to remove perfluorinated  
18 chemicals from emission streams?

19          A.     No.

20          Q.     And the model you used in this case was  
21 called AERMOD. Is that right?

22          A.     That is correct.

23          Q.     Now, to use AERMOD, you need to set the  
24 inputs for the model based on your analysis of the  
25 site you're trying to model. Is that fair?

1           A.     That is fair.

2           Q.     You'd agree that when you're modeling with  
3     AERMOD, you have to understand what the source is to  
4     be able to estimate what the emissions are.    True?

5           A.     True.

6           Q.     And you have to understand what chemicals  
7     are used at the facility to use AERMOD?

8           A.     Yes.

9           Q.     And you have to --

10          A.     Well, I mean, to estimate the emission rates  
11     that goes in input, yes.

12          Q.     So to use AERMOD to estimate emissions rate  
13     from a facility, you need to know what chemicals are  
14     being used at the facility.    Right?

15          A.     Well -- and, again, I would maybe revise my  
16     last answer, is you can actually run AERMOD and --  
17     well, you -- yes, you typically want to know what the  
18     emission rates are.

19          Q.     To accurately use --

20          A.     Yeah.

21          Q.     -- AERMOD?

22          A.     Right.   Yeah, to come up with some kind of a  
23     concentration or deposition or whatever, you  
24     eventually got to know what -- what you're applying as  
25     far as an emission rate in most cases, yeah.

1 Q. And to accurately use AERMOD to model air  
2 emissions from the facility, you'd have to know how  
3 the chemicals are being used in the facility. Fair?

4 MR. DAVIS: I'm going to object to the form  
5 of the question as vague.

6 THE WITNESS: Yeah, so help me out.  
7 Rephrase the question, please.

8 BY MR. CURRAN:

9 Q. I'll repeat the question.

10 A. Okay. Repeat the question.

11 Q. To accurately use AERMOD to model air  
12 emissions from a facility, you'd have to know how that  
13 facility is using chemicals that are in the emission  
14 stream.

15 MR. DAVIS: I'm going to object to the form  
16 of the question, and I'm objecting specifically  
17 to the term "accurately" as vague.

18 THE WITNESS: In most cases, yeah, when  
19 you're running the AERMOD, you have to understand  
20 or be provided information on how the emission  
21 rates come from the process. There's a lot of  
22 times that, you know, my role, I can't figure it  
23 out. I don't know that -- I don't have that  
24 information, and some of it is provided by the  
25 engineers, for example, at the facility to help

1 with what would actually be emitted.

2 BY MR. CURRAN:

3 Q. To try and provide an accurate AERMOD model,  
4 you attempt to understand how the chemicals that  
5 you're modeling are being used in the facility. Fair?

6 A. As best I can, yes.

7 MR. DAVIS: Same objection.

8 BY MR. CURRAN:

9 Q. And to accurately use AERMOD, a modeler  
10 should know the design or the layout of the facility.  
11 Is that fair?

12 MR. DAVIS: Objection to the term  
13 "accurate."

14 MR. CURRAN: Gary, I'm going to see if we  
15 can come to a resolution here. Under the --

16 MR. DAVIS: It's a vague term.

17 MR. CURRAN: Under the Local Rules, you are  
18 entitled to object to form and offer non-speaking  
19 objections.

20 MR. DAVIS: Right.

21 MR. CURRAN: And we're trying to be careful  
22 on both sides of this case to object just to  
23 form, and I'm hoping that we can do that here in  
24 this case.

25 MR. DAVIS: I'm trying to instruct you on



1           how to ask a question that's not vague.

2           MR. CURRAN: I appreciate the guidance, and  
3 I'm going to ask you not to do that because I  
4 don't need your instruction to this case. I need  
5 you to just say, Objection, form, and not speak  
6 to the witness through your objections.

7           MR. DAVIS: I wasn't speaking to the  
8 witness. I was speaking to you. The objection  
9 was to your question.

10          MR. CURRAN: And I appreciate your desire to  
11 tell me what you think is wrong with the  
12 question.

13          MR. DAVIS: Uh-huh.

14          MR. CURRAN: But I'm going to ask you to  
15 object to form for the remainder of this  
16 deposition.

17          MR. DAVIS: I'll object in the manner in  
18 which I choose.

19          MR. CURRAN: We've made the record clear.

20          MR. DAVIS: I've been practicing under these  
21 Local Rules for a long time.

22 BY MR. CURRAN:

23          Q. So Mr. Yoder, you'd agree that to accurately  
24 model facilities' emissions using AERMOD, you want to  
25 understand the design and layout of the facility?

1 MR. DAVIS: Same objection.

2 THE WITNESS: Well, to the degree that you  
3 want to know where the emission points are that  
4 you're modeling, simulating at least, yes.

5 BY MR. CURRAN:

6 Q. If you want to accurately model emissions  
7 from the facility, you want to understand the design  
8 and layout of those emissions points. Fair?

9 MR. DAVIS: Same objection.

10 THE WITNESS: Yes.

11 MR. DAVIS: Can I have a -- a standard  
12 objection -- a running objection to the term  
13 "accurate"?

14 MR. CURRAN: Absolutely.

15 MR. DAVIS: Okay. That will -- that will  
16 shorten this.

17 THE WITNESS: Yes, you need to understand  
18 the -- the locations of -- if you're modeling  
19 emission points, where the locations are of those  
20 points, so, yes, the layout.

21 BY MR. CURRAN:

22 Q. Why is it important to accurately understand  
23 the design of the size of the emissions points when  
24 you're conducting an AERMOD analysis for a facility?

25 A. Well, it affects the -- it affects the -- in

1     how the model simulates the dispersion, and  
2     specific -- specifically in short term, when you're  
3     dealing with short-term concentrations, it really can  
4     have some -- some bearing on -- short term and nearby,  
5     near the facility.

6           Q.     How does the -- the height of the emissions  
7     point impact the AERMOD analysis or air emissions?

8           A.     Well, generally, I mean, obviously if you  
9     have a -- a higher stack, you're releasing the  
10    compound in a much, you know, higher elevation. So  
11    depending on where you're trying to determine where  
12    your impact is and where that plume impacts, the  
13    height is one of the key inputs as determining how --  
14    what the model calculates when it does its  
15    computation, does a particular location.

16          Q.     And how does the diameter of the emissions  
17    point impact the AERMOD analysis for air emissions?

18          A.     Well, it doesn't. It -- it uses the exit  
19    velocity, so diameter is tied to the exit velocity.

20          Q.     And how does exit velocity impact the --  
21    strike that.

22                   How does exit velocity for a -- a particular  
23    emission stream impact the AERMOD analysis for that  
24    stream?

25          A.     It affects the -- the term, the -- well, the

1 exit velocity, so you have two -- two terms, two flux  
2 terms. I -- I call them mechanical basically, the --  
3 the physical release in a vertical direction of the,  
4 whatever you're modeling, a minimum flux I guess is  
5 what they will call it, and you have the heat flux  
6 too, so that exit velocity is -- is tied into that  
7 equation. I hope you don't ask me about the  
8 mathematics. I -- I don't know them that well.

9 Q. For an accurate AERMOD model, you'd want to  
10 be as precise as possible about the -- the height of  
11 the -- the emissions point. Fair?

12 MR. DAVIS: Objection, vague question.

13 THE WITNESS: Obviously, yes, if you try  
14 and -- you try and -- anytime you build a model,  
15 you want to be as accurate as possible with the  
16 data that you -- you have and your understanding  
17 and building input.

18 BY MR. CURRAN:

19 Q. And in the field, you'd agree with me that  
20 the accepted methodology is to be as accurate as  
21 possible about the height of the emissions point?

22 A. Accurate as possible based on the  
23 information you have, yes, of course.

24 Q. And you'd agree with me that in the field,  
25 the accepted methodology is to be as accurate as

1 possible about the exit velocity for the stream that  
2 you're measuring. True?

3 A. As best as you can, yes, from the  
4 information that you have.

5 Q. And that emission stream that exits from a  
6 certain point at a certain velocity and then moves  
7 into the wind, you'd want to be as accurate as  
8 possible about the wind data that you're using for an  
9 accurate AERMOD model. Is that fair?

10 A. Yes.

11 Q. In this case when you were deciding on the  
12 inputs for your AERMOD model, you estimated different  
13 potential emission rates from facilities in Bennington  
14 and from North Bennington. Correct?

15 A. I'm sorry. Repeat the question again,  
16 please.

17 Q. Sure. In this case when you were deciding  
18 on the inputs for your AERMOD model --

19 A. Yes.

20 Q. -- you had to estimate different potential  
21 emissions scenarios for facilities in Bennington, but  
22 also in North Bennington. Correct?

23 A. Okay, yes.

24 Q. Did you visit either the Bennington or North  
25 Bennington facility to assess their size?

1           A.     I did North Bennington, not the Bennington.

2           Q.     And when did you visit the North Bennington  
3 facility -- I'm sorry, the -- when did you -- yeah,  
4 when did you visit North Bennington?

5           A.     It was May, I believe.

6           Q.     And did anyone accompany you on that visit  
7 in -- to the North Bennington facility in May?

8           A.     Yes.

9           Q.     Who was that?

10          A.     Actually, it was -- Cathy was with me when  
11 we actually went by the building, the one in North  
12 Bennington.

13          Q.     Other than Ms. Dare, anyone attend this  
14 visit to the North Bennington facility with you?

15          A.     No.

16          Q.     Describe for me the activities that you and  
17 Ms. Dare engaged in to perform that on-site analysis  
18 of the facility.

19          A.     It really wasn't any more than just putting  
20 eyeballs on it. You know, we were looking at drawings  
21 and pictures and -- and reading documents. It was  
22 just an opportunity to actually physically see it, you  
23 know, but there wasn't really any analysis done.

24          Q.     So you were in the area of the North  
25 Bennington facility, but you didn't take specific

1 measurements --

2 A. No, no.

3 Q. -- of the facility? Other than that  
4 May 2017 visit to North Bennington, did you do any  
5 other facility -- on-site facility visits or  
6 measurements to determine your AERMOD inputs?

7 A. No, I did not.

8 Q. Prior to this case, did you have any  
9 experience with PTFE coating towers?

10 A. No.

11 Q. Did you conduct any analysis of PTFE coating  
12 towers in connection with your modeling in this case?

13 A. No.

14 Q. Did you do anything to try and educate  
15 yourself about how PTFE coating towers operate?

16 A. I did.

17 Q. And what did -- what was that?

18 A. It was basically just to understand how the  
19 process worked. It's pretty simple. But, yeah, just  
20 to understand the -- the whole concept of the fabric  
21 coating and the solution and the different drying  
22 zones and, you know, the up and out or the up and down  
23 and out or -- I forget the other terminology, but the  
24 different types of -- of ways of -- of coating the  
25 cloth, so, yes.

1           Q.    How many different dispersions did ChemFab  
2   utilize to coat fabrics at its Northside Drive  
3   facility in Bennington, Vermont, between '69 and '78?

4           A.    I have no idea.

5           Q.    Did you try to do anything to determine how  
6   many different dispersions ChemFab used to coat  
7   fabrics at Northside Drive in those years?

8           A.    I did not, no.

9           Q.    Did you do anything to analyze the  
10   components of each of the dispersions that ChemFab  
11   used to coat fabrics at Northside Drive between '69  
12   and '78?

13          A.    I did not, no.

14          Q.    I'll ask him the same questions about the  
15   other facility. I'm sorry, I'll strike that.

16                How many different dispersions did ChemFab  
17   use to coat fabrics at its Water Street facility in  
18   North Bennington, Vermont, between the years '78 and  
19   2001?

20          A.    I do not know.

21          Q.    And did you do anything to determine the  
22   components of each dispersion utilized by ChemFab to  
23   coat fabrics at Water Street between '78 and 2001?

24          A.    I did not.

25          Q.    And did you try to determine how many



1 different dispersions were used to coat fabrics at  
2 Water Street between '78 and 2001?

3 A. I did not, no.

4 MR. DAVIS: Counsel, can we ask, we've been  
5 going about an hour, when you come to a  
6 convenient stopping point, that we -- we can take  
7 a break?

8 MR. CURRAN: Actually, I think that's a good  
9 stopping point.

10 MR. DAVIS: Okay.

11 THE VIDEOGRAPHER: We're off the record at  
12 10:07 a.m.

13 (RECESS TAKEN)

14 THE VIDEOGRAPHER: We're back on the record  
15 at 10:22 a.m.

16 BY MR. CURRAN:

17 Q. As just a housekeeping note, would it be  
18 possible, for exhibit numbering -- we have two copies  
19 of your report right now, the annotated version and  
20 the non-annotated version, and rather than have an  
21 Exhibit 1 and an Exhibit 3 that are both the same  
22 document, I'd like to relabel your Exhibit 3 as  
23 Exhibit 1A.

24 A. Oh, okay.

25 Q. It's -- just a 1 annotated. That will help

1 with the numbering as we go through.

2 A. Okay.

3 Q. So we'll just relabel what's currently  
4 Exhibit 3, I'll just note on this that this is --  
5 we're going to relabel this as Exhibit 1A.

6 MR. DAVIS: We're not on the record, are we?

7 MR. CURRAN: We are.

8 MR. DAVIS: Okay.

9 MR. CURRAN: So -- oh, thank you, thank you.  
10 The reason I do that right now, I'm going to mark  
11 something else as Exhibit 3, so before we get  
12 confused about anything -- thank you very much --  
13 I will change this to 1A. Thank you. And then  
14 I'll -- this one's 3, this one -- oh, thank you.

15 THE COURT REPORTER: Oh.

16 MR. CURRAN: I'm sorry, I've used 3, so 3  
17 here. And we'll mark as -- as Exhibit 3 a copy  
18 of the conceptual site model.

19 THE WITNESS: Okay.

20 (EXHIBIT 3 WAS MARKED FOR IDENTIFICATION)

21 BY MR. CURRAN:

22 Q. Mr. Yoder, are you familiar with the  
23 conceptual site model prepared by Barr Engineering?  
24 This is the June 2017 version.

25 A. I am.

1 Q. What's your understanding of how Barr  
2 Engineering modeled air emissions from the former  
3 ChemFab facilities in Exhibit 3?

4 A. That they modeled PFOAs, particulate matter  
5 emissions from both the Water Street and Northside  
6 Drive facilities using AERMOD, five years of  
7 meteorological data, processed meteorological data.

8 Q. Do you -- do you disagree with any of the  
9 air modeling methodologies that Barr Engineering used  
10 to prepare this June 2017 conceptual site model?

11 A. Well, there -- there's a couple inputs I --  
12 I was scratching my head about on some of the stack  
13 parameters. What are you talking, the overall  
14 approach, the model? I mean, what specifically --

15 Q. Let's start with --

16 A. -- are you asking me?

17 Q. Let's start with just the overall  
18 methodology.

19 A. Overall methodology. No, I don't.

20 Q. So you wouldn't disagree with the overall  
21 methodology used by Barr Engineering for the June --  
22 June 2017 conceptual site model. True?

23 A. True.

24 Q. Do you use methodologies in your report that  
25 differ from those used by Barr Engineering to prepare

1     their conceptual site modeling in June 2017?

2           A.     That is hard to answer because I don't have  
3     any of the specifics on their modeling other than  
4     their description and figures and some of the input  
5     tables, but there's a lot of details that I don't  
6     have.

7           Q.     Do you consider the methodologies used in  
8     your report to be more accurate than the methodologies  
9     used by Barr Engineering?

10           MR. DAVIS: I'm going to -- I'm going to  
11     object -- you got to let him finish the question  
12     before you answer, but I'm going to interpose an  
13     objection.

14           THE WITNESS: Umm ...

15           MR. DAVIS: Objection to the form of the  
16     question.

17           THE WITNESS: Okay. So -- so -- repeat the  
18     question for me. So do you think -- do I  
19     think --

20     BY MR. CURRAN:

21           Q.     Do you consider the methodologies used in  
22     your report to be more accurate than the methodologies  
23     used by Barr Engineering in Exhibit 3?

24           A.     I may consider, like, some of my decisions  
25     on some of the input on the input parameters for a

1 couple of the stacks more accurate, but -- yeah, so  
2 there may be some points here and there that I may --  
3 I would consider might be more accurate.

4 Q. So we've been talking about overall  
5 methodology. Let's -- let's move to inputs and  
6 assumptions.

7 A. Okay.

8 Q. What, if any, assumptions does Barr make  
9 when applying its air emissions model that you  
10 disagree with?

11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]

19 Q. Aside from the assumptions about ambient  
20 temperature exhaust, any other assumptions that Barr  
21 made in the report that you can recall that you  
22 considered unreliable?

23 A. I'd -- I'd have to go back and -- and look  
24 at this a little bit closer, and -- and there may be,  
25 but off the top of my head, I can't think of anything.

1 Q. Can you recall any assumption that you made  
2 in your report that differ from those made by Barr?

3 A. Well, I think they had -- you know, again --  
4 and it kind of goes back to some of the input  
5 parameters. Maybe it's the way they characterized the  
6 particulate for the method 2. Again, I don't have  
7 much information on how they did it, so.

8 Q. If you had any specific criticisms of the  
9 Barr report and you plan to express those opinions in  
10 this case, you would have included them in your expert  
11 report. Fair?

12 A. Yeah, yeah, but I really was trying to do my  
13 analysis as a standalone document, as a standalone  
14 analysis.

15 Q. Now, in this case, you modeled PFOA  
16 emissions from -- well, strike that.

17 You'd agree that the accuracy of your model  
18 output depends on the accuracy of your model inputs.  
19 Fair?

20 MR. DAVIS: Object to the question, to the  
21 form of the question.

22 THE WITNESS: Yes, I mean, of course, yes.

23 BY MR. CURRAN:

24 Q. So if the inputs to your model are not  
25 accurate, then the output of your model won't be

1 accurate?

2 A. Well, not necessarily, no. I mean, if -- if  
3 you're -- you can have some slight inaccuracies that  
4 still give you maybe what you're looking for in the  
5 analysis. In other words, going back and correcting  
6 some -- some -- some inaccuracies really would not  
7 have -- it wouldn't have a significant impact on -- on  
8 the results as maybe they were in the first time, so  
9 that's always a possibility.

10 Q. For model outputs to be accurate -- well,  
11 strike that.

12 With respect to the Water Street facility in  
13 North Bennington, you prepared three different  
14 emissions models using three different annual  
15 emissions rates?

16 A. That's correct.

17 Q. Now, in your paragraph 7 of your  
18 declaration -- that's Exhibit 2.

19 A. Oh, 7.

20 Q. Paragraph 7, you say that these three PFOA  
21 emission rate scenarios are based on information  
22 provided by the Vermont DEC and Saint-Gobain and its  
23 consultants. I also relied upon the expert report of  
24 Philip K. Hopke.

25 Do you see that?

1           A.     Yes.

2           Q.     So taking those in turn, what information  
3 did you receive from the Vermont DEC?

4           A.     There was some air dispersion modeling files  
5 that they -- they had run the AERMOD also -- no, I  
6 take that back. So you're asking specifically about  
7 this scenario, this 100 -- oh, no, that was from a  
8 conversation that we had, a conference call, so.

9           Q.     Well, I just want to understand. You say  
10 here that the three PFOA --

11          A.     Uh-huh.

12          Q.     -- emission rate scenarios are based on  
13 information from those sources. So what information  
14 did you receive from the Vermont DEC for any of those  
15 three PFOA emission rate scenarios you mentioned in  
16 paragraph 7?

17          A.     So we just -- we just -- we just hadn't --  
18 we had to understand or did -- didn't quite understand  
19 completely what the PFOA emission rate was, so we  
20 just -- I decided with the team that we would bound  
21 these on low end, middle, upper end. So the bounds  
22 were made by, again, what -- what Barr did and then a  
23 thousand pounds per year based on what DEC did or what  
24 they thought was going on from a conversation that we  
25 had with them, and also based on the -- the one



1 reference I have in there, which I told you that I  
2 forgot to add to my reference list, was Allied  
3 Technologies' 1992 analysis for fluorinated  
4 hydrocarbon emission rates, and then the 10,000 pounds  
5 per year's potential for, you know, mostly talking to  
6 Phil Hopke what -- what may be actually happening  
7 there as far as PFOA emissions.

8 Q. Why did you decide to prepare what you  
9 called an upper and lower bound --

10 A. And, again --

11 Q. -- emission rate?

12 A. -- because it's -- as far as modeling input  
13 goes, going back to your question, as far as  
14 understanding what emission rates would be in a lot of  
15 cases, you know enough -- have enough information from  
16 an -- I would say from an engineering standpoint to  
17 understand what the mass emission rate may be coming  
18 from a stack that you're inputting into the -- into  
19 the model and would be your typical input.

20 In this case, it's -- it's a point of  
21 debate, so we just approached it as where this may  
22 fall as far as what -- what is actually ultimately the  
23 outcome as far as PFOA emissions or were.

24 Q. Did you try to make any assessment of  
25 whether the upper and lower bounds you used as inputs

1 for your models were reasonable or accurate  
2 assessments of PFOA emission rates?

3 A. Yes, in -- in working with Phil, yeah, that  
4 we know is -- yeah.

5 Q. Describe the steps that you took to assess  
6 whether an upper bound of 10,000 pounds per year was  
7 reasonable or accurate.

8 A. And, again, I would rely primarily on Phil  
9 Hopke's work, but in his understanding or his belief  
10 that the PFOA was emitted prior to any kind of  
11 decomposition or control of it from the -- from the  
12 drying zone, which is where, if that was the case and  
13 it turned out to be the actual fate of PFOA, then we  
14 would see something much, much higher as far as  
15 emission rate of PFOA.

16 Q. Why did you decide to identify three  
17 different scenarios for PFOA emissions rates rather  
18 than determine the most likely PFOA emission rate?

19 A. Just, you know, to -- well, a little bit of  
20 comparison to previous modeling and compared to what  
21 other -- what other analysis have -- you know, what's  
22 been done also from other --

23 Q. You just referenced "comparison to previous  
24 modeling." What modeling are you referring to?

25 A. Well, I know that their -- that the DEC has

1     also done some -- some air modeling too, so a lot of  
2     this going in was, would our results be similar?

3           Q.     Was your goal to achieve a model output that  
4     was similar to the one that you see?

5           A.     Well, it was not necessarily the goal, but  
6     it was -- you know, it was part of the analysis when  
7     it was finished, is it similar, and if not, then --  
8     then I'd be asking, well, what's the big difference?  
9     Why -- why does mine look so much different? What --  
10    what's going on here?

11          Q.     If -- if your air emissions model resulted  
12    in different results than the Vermont DEC air  
13    emissions model, it's your testimony that you would be  
14    then questioning the Vermont DEC air emissions model?

15          A.     I could question Vermont. I mean, if the  
16    initial -- the initial -- initial runs were different,  
17    I'd maybe even question myself, but, you know -- and I  
18    didn't -- looking at it more from a general deposition  
19    contour viewpoint, not a specific deposition rate of a  
20    particular receptor, so it was just an overall kind of  
21    comparison.

22          Q.     So you weren't attempting to determine the  
23    particular deposition rate at any particular receptor  
24    as part of your analysis?

25          A.     Well, no, I was. I mean, to generate the

1 graphics that I have presented, I did, I had to do  
2 that, so, yes, that was included in the analysis.

3 Q. So I want to understand, when you say, "I  
4 wasn't looking at it more from a general deposition  
5 contour viewpoint, not a specific deposition rate of  
6 any particular receptor, just an overall kind of  
7 comparison," what does that mean?

8 A. Yeah, I mean, I should have been a little  
9 bit clearer in my -- what I was trying to tell you was  
10 that I -- when comparing my analysis to the other  
11 analyses, I was generally looking at how the model  
12 simulated the deposition within the Bennington area,  
13 specifically with the complex terrain that's in --  
14 that's in that area.

15 Q. When you say the complex terrain in the  
16 Bennington area, what are you referring to?

17 A. Oh, so it's a modeling term for terrain  
18 elevations over model stack heights, stack -- stack  
19 exhaust elevations, and once you've got terrain over  
20 that height, it's considered in the modeling world as  
21 complex, is what they call it.

22 Q. Let me ask about some of the inputs to your  
23 different emission rate scenarios. Did you rely on  
24 information from Vermont DEC to develop your  
25 100 pounds-per-year emission scenario?

1           A.    No.  Actually it was, from what I understood  
2   from a general -- as I wrote in the -- in my report,  
3   the level that Barr was estimating coming from the  
4   facility, so around 100 pounds per year.

5           Q.    So the basis for your 100 pounds per year  
6   figure is, I believe it's appendix A to the Barr  
7   report.  Is that right?

8           A.    Yes.

9           Q.    Okay.  Now, I believe that in appendix A,  
10  Barr estimates emissions as 145 pounds per year?

11          A.    That sounds right, yes.

12          Q.    How did you get from 145 pounds a year to  
13  100 pounds per year?

14          A.    We're modeling a unit emission rate, so it  
15  was -- it was just a -- you know, a bit of an  
16  arbitrary approach to what may be happening as far as  
17  deposition in the area of the Saint-Gobain facility.  
18  I -- you know, for me to say, oh, there's exactly this  
19  many grants but the model says there's exactly this  
20  many grants per meter squared per year at a particular  
21  location goes back to actually knowing what the PFOA  
22  emission rate is, and, again, my analysis did not  
23  include that.  It's -- it's because it is a bit of a  
24  debate, so we used the three scenarios.

25          Q.    Now, you mentioned earlier a 1992, I think,

1 Allied Technologies report?

2 A. Yes, yes.

3 Q. So I'll -- I'll mark that as --

4 A. Yeah, table 10, I believe, is --

5 Q. -- as Exhibit 4.

6 A. Yeah, yeah.

7 Q. And table 10 is located on page 12. We'll  
8 mark that Exhibit 4, the copy.

9 A. Okay.

10 (EXHIBIT 4 WAS MARKED FOR IDENTIFICATION)

11 BY MR. CURRAN:

12 Q. So do you recognize what's been marked as  
13 Exhibit 4?

14 A. Yes.

15 Q. And what is this that we're looking at?

16 A. This is Alliance Technologies', they call it  
17 diagnostics test program results, 1992.

18 Q. And I believe you testified that you applied  
19 table 10 on page 12 for -- as the basis for your  
20 1,000 pounds per year?

21 A. It's a basis, yes.

22 Q. Describe to me how you used table 10 to --  
23 to come up with the 1,000 pounds-per-year emission  
24 rate.

25 A. Well, with Phil Hopke we were trying to get

1 an idea of -- you know, obviously PFOA was not  
2 measured directly, you know, back at this time. It  
3 wasn't -- so we were trying to figure out based on  
4 the -- some of the analyses that were done, test  
5 reports, things like that that would have been an  
6 indicator what the PFOA emission rate was, what we  
7 were actually looking at.

8 And this document mentioned the -- on  
9 table 10, page 12, you said? Yeah -- the fluorinated  
10 hydrocarbon emission rate of .15 pounds per hour,  
11 so -- and, again, we had a conversation with DEC,  
12 trying to understand some of the permitting history  
13 and things that they were looking at. And they didn't  
14 believe it was the total all PFOA, maybe an order of  
15 magnitude less, which is where you come up with  
16 about -- if you multiplied that emission rate by all  
17 the stacks, you came up with about 1400 pounds a year,  
18 so that's where we kind of arbitrarily selected the  
19 1,000.

20 Q. I want to unpack that a little bit. You  
21 mentioned multiplying by 11 stacks. What did you mean  
22 by that?

23 A. I -- I modeled 11 stacks, and, again, this  
24 is what I was able to pull from the data. And I  
25 believe, you know, Barr maybe had 12 stacks, so maybe

1 I combined a tower or two that shouldn't have been.  
2 It was a little -- it was difficult to decipher.  
3 There were several changes at this facility over the  
4 course of the years, so I -- I tried to incorporate  
5 into my modeling the most recent state of the facility  
6 kind of at the end before it was closed, so I have 11  
7 stacks, I believe, in my table.

8 So basically it was a pound per hour  
9 because, if I understood it correctly from this, it  
10 was that it was from a particular source or tower, so  
11 we multiplied this emission rate just assuming it was  
12 across the board for all the towers, that emission  
13 rate.

14 Q. What was your basis for that assumption?

15 A. Well, it was really, again, we're just  
16 trying to come up with something to -- for a model  
17 input as best as we can without having all the data  
18 that -- obviously at our disposal that we could have,  
19 and so it was -- it was assuming that the -- the  
20 facility was operating pretty much around the clock,  
21 which I believe it was, and that the towers would  
22 have, you know, obviously been all operating for the  
23 most part continuously, and it was just an assumption  
24 that -- to take that emission rate across the board.

25 Q. Did you consider and reject any other



1 assumptions for the -- the level of operation at  
2 either facility?

3 A. No, I can't recall anything in particular  
4 that I would have -- would have rejected.

5 Q. Let me go back to Exhibit 4, table 10.

6 A. Yeah.

7 Q. Can you point me to the -- the data here  
8 that you used for your 1,000 pounds-per-year --

9 A. Yeah.

10 Q. -- figure?

11 A. Fluorinated hydrocarbon, emission rate,  
12 pound per hour, .15, VOST data summary.

13 THE COURT REPORTER: The what data summary?

14 THE WITNESS: It's VOST, sorry, V-O-S-T.

15 It's -- you know, it's -- the PTFE is what they  
16 called it. It's tower E. Here's what I was  
17 referring to. So it was a particular tower, an  
18 emission rate from one tower.

19 BY MR. CURRAN:

20 Q. This was an emission rate from one tower?

21 A. Yeah.

22 Q. From tower E?

23 A. That's right.

24 Q. Do you know how many other towers were  
25 operational in North Bennington in 1992?

1           A.     1992, not off the top of my head, I don't --  
2     it -- again, it changed. Seemed like every two, three  
3     years they were adding a new tower, and I -- I don't  
4     know the chronology as -- of what it was at -- at that  
5     time.

6           Q.     So you're aware that approximately every few  
7     years --

8           A.     Yeah.

9           Q.     -- new towers were coming online or offline  
10    at the facility. Correct?

11          A.     That's correct.

12          Q.     This analysis on tower E --

13          A.     Uh-huh.

14          Q.     -- in Exhibit 4, was this the only tower in  
15    which perfluorinated -- I'm sorry, fluorinated  
16    hydrocarbons were detected by Alliance?

17          A.     Were detected by what?

18          Q.     By -- by Alliance.

19          A.     Oh, good question. I'd have to go back and  
20    look at this. I don't remember all of the -- so it  
21    says they did E and P, so I'd have to look at the  
22    document to see if there was also any data on P, so  
23    that's possible.

24          Q.     Did you -- as part of your initial analysis,  
25    did you attempt to look for additional data points

1 before you picked the emission rate that you had used  
2 to apply to different towers?

3 A. Well, again, in my approach, I was really  
4 just trying to kind of bound what the potential  
5 emissions rates could be from a low end to a high end,  
6 so, no, I didn't really spend a whole lot of time in  
7 coming up with something different than 1,000. It  
8 seemed to be a good fit based on what we have here for  
9 that particular tower.

10 Q. Do you know what product was being run at  
11 the time of this tower E run 3 analysis by Alliance  
12 Technologies?

13 A. No, I do not.

14 Q. Do you know if the product that was being  
15 run was representative of other products made in North  
16 Bennington, Vermont?

17 A. I can only assume that it was, but I  
18 don't -- yeah.

19 Q. Do you have any basis for that assumption?

20 A. I mean, just because it's -- they -- you  
21 typically, when you run -- you're doing some kind of a  
22 test, you should be running what you typically run  
23 through a tower, and, in most cases, to try and  
24 challenge the process, meaning to where -- you know,  
25 run it as -- as close to design as possible, but I

1 don't -- again, I'm just making an assumption, I -- to  
2 answer your question.

3 Q. Do you know how many different substances  
4 could be classified as fluorinated hydrocarbons?

5 A. I do not.

6 Q. And this 1992 Alliance report, does it state  
7 what fluorinated hydrocarbon was tentatively  
8 identified from tower E?

9 A. I seem to recall that it did not -- well,  
10 actually, maybe they did. They went through the  
11 process, through the lab analysis. But, again, this  
12 is getting out of my area of expertise, so I see a lot  
13 of that stuff, and I don't know what it means, so.

14 Q. So fair to say you didn't attempt to  
15 determine --

16 A. No.

17 Q. -- what fluorinated hydrocarbon in  
18 Exhibit 4 --

19 A. No, no, sir.

20 Q. -- was PFOE -- sorry, PFOA?

21 A. Yeah.

22 Q. Now, I understand that you did have a phone  
23 call with the Vermont DEC in May of 2017?

24 A. That is correct.

25 Q. Describe for me, why did you have that phone

1 call with the Vermont DEC in May 2017?

2 A. I -- mostly it was -- it was the air  
3 modeling expert, I believe, conducted AERMOD, air  
4 dispersion modeling, and it was really just to kind of  
5 get a basis for his analysis and what they -- what the  
6 DEC thought was being emitted as far as PFOA, how they  
7 come to that conclusion, and their approach from an  
8 air dispersion modeling standpoint.

9 Q. And who from the Vermont DEC did you speak  
10 to?

11 A. I got it in here.

12 Q. I -- I have it as Philip --

13 A. Yeah.

14 Q. -- Cannata, but I'm not sure if it's Cannata  
15 or Cannata.

16 A. Cannata is --

17 Q. Oh, okay.

18 A. -- is what I was saying, yes.

19 Q. So you spoke to Mr. Philip Cannata --

20 A. Correct.

21 Q. -- in May 2017?

22 A. That's right.

23 Q. Is Mr. Cannata a consultant to the Vermont  
24 DEC or a member of the Vermont --

25 A. As I understand, he was actually an

1 employee, a staff member of the DEC.

2 Q. And what did Mr. Cannata explain to you  
3 about the Vermont DEC's emissions modeling?

4 A. Mostly that, you know, he was involved in  
5 the AERMOD side of modeling, but I believe they also  
6 ran the CALPUFF model. And he just -- based on what  
7 he understood from -- he did not perform the CALPUFF  
8 modeling, but based on what he understood from that  
9 analysis, was that there was good agreement between  
10 CALPUFF and AERMOD. So it's -- and some general  
11 information on, you know, kind of what they thought --  
12 again, this goes back to the 1,000-pound-per-year  
13 scenario, is that they thought that there was more  
14 PFOA emitted, and his estimate was thousand -- a  
15 thousand pounds per year roughly, a thousand -- 1500,  
16 I think, maybe what he said.

17 Q. I understand that -- strike that.

18 What are the differences -- strike that as  
19 well. I'm sorry.

20 Did you run a CALPUFF model in this case?

21 A. I did not.

22 Q. Why did you decide not to run a CALPUFF  
23 model?

24 A. Well, CALPUFF is a very difficult model to  
25 run. It's a very data-intensive model to run, and I

1 was not sure if there was data available to even  
2 attempt to run it.

3 Q. Do you consider the CALPUFF model run by  
4 Vermont DEC to be reliable?

5 A. I -- I do.

6 Q. You decided not to run a CALPUFF model in  
7 this case though?

8 A. Yes. No, I ...

9 Q. In your opinion, could a CALPUFF model be  
10 reliably run with this data?

11 A. Well, yeah, I suppose, yes, if the data is  
12 available to run, yes, it could be run.

13 Q. Why did you choose not to run that model if  
14 you believed it could be reliably done as a check?

15 A. An AERMOD is also a reliable and recommended  
16 and approved model by the U.S. EPA and -- and quite  
17 simpler to run, easier to run, so.

18 Q. Is CALPUFF currently a recommended model by  
19 the U.S. EPA?

20 A. I do believe it's not, the last I heard.

21 Q. Would you believe it -- would you consider  
22 it best practices to run a CALPUFF model currently,  
23 given the U.S. EPA's guidance?

24 A. Yeah, that's a good question. I would say  
25 probably not. I -- what I don't know -- honestly, I'm

1 not sure about that answer 'cause I have not run a  
2 CALPUFF model in many years myself, so.

3 Q. Is the reason that you haven't run a CALPUFF  
4 model in many years, that the CALPUFF model is not as  
5 favored by the EPA?

6 A. No, mostly because it's not easy to run.

7 Q. In your report, you reference Mr. Cannata  
8 relaying to you a discussion with a Vermont DEC -- I'm  
9 sorry, a -- a Vermont DEC discussion with a ChemFab  
10 engineer?

11 A. Ah, yes.

12 Q. Do you recall that?

13 A. I do recall that.

14 Q. Can you describe for us what you recall  
15 about that discussion?

16 A. Yeah. I don't -- other than the fact that  
17 he had mentioned it and it -- it was tied to what he  
18 thought was a higher emission rate than what he  
19 understood was being presented by Barr, but I don't  
20 remember -- he didn't -- I don't think he gave a name  
21 of the engineer or much about what that was -- in that  
22 discussion other than he just had some more  
23 information and thought maybe it would result in -- it  
24 should be a higher PFOA emissions from the facility.

25 Q. What's your understanding of Mr. Cannata's



1      role within the Vermont DEC?

2           A.     My understanding is, and -- is he's a -- a  
3      meteorologist in the air dispersion modeling group. I  
4      could be wrong about that. I did not ask him what  
5      his -- his title or role is.

6           Q.     And of all the people who work for the  
7      Vermont DEC, why did you speak with Mr. Cannata  
8      specifically about this subject?

9           A.     Again, I think he -- because he was -- if I  
10     recall correctly, he was -- he was understand -- he --  
11     we were mostly after how the air dispersion modeling  
12     was done for the -- their version of the air  
13     dispersion modeling and that he was familiar with that  
14     and may have been the one who executed it, if I'm not  
15     mistaken.

16          Q.     So he may have actually run the modeling?

17          A.     He may have. I can't remember now exactly.

18          Q.     How did you come to identify Mr. Cannata as  
19     the right person to speak to?

20          A.     I believe that was provided by the counsel.

21          Q.     When you say "the counsel," you're referring  
22     to counsel for the Sullivan plaintiffs in this case?

23          A.     Yeah, the plaintiffs' counsel, yes.

24          Q.     Now, you state in your report that  
25     Mr. Cannata did not believe all of the fluorinated

1 hydrocarbons measured by Alliance Technologies was  
2 PFOA.

3 A. Yeah.

4 Q. Is that right?

5 A. That's correct.

6 Q. Okay. And possibly an order of magnitude  
7 less?

8 A. That's right. So that was his -- his  
9 opinion. He didn't give any technical reason for it,  
10 which took us back to the .15 for our middle basis,  
11 which would be .015.

12 Q. And did you press Mr. Cannata for his basis  
13 for that?

14 A. I, no, didn't really press him, no. It was  
15 a brief phone call.

16 Q. Were you allowed to ask questions in the  
17 phone call?

18 A. Oh, yes.

19 Q. What questions did you ask Mr. Cannata about  
20 his analysis or his assumptions?

21 A. You know, I think Phil was mostly interested  
22 to -- on the PFOA of things. I was the guy mostly  
23 interested in how they did the modeling. Most of my  
24 questions were regarding that, meteorology, CALPUFF.  
25 That was the other thing, because he mentioned the

1 CALPUFF. I believe on that call is when we found out  
2 that -- that the State had also done CALPUFF modeling,  
3 so we were curious about that. That was mostly my --  
4 I believe my -- my questions during that call.

5 Q. Did you do anything to test or confirm  
6 Mr. Cannata's assumptions about an order of magnitude  
7 less than .15 being the right number for PFOA as the  
8 volume of perfluorinated --

9 A. That's right.

10 Q. -- hydrocarbons?

11 A. Sorry. No. I mean, to test it, no. Just  
12 used it as a -- as a basis for one of our scenarios.

13 Q. When Mr. Cannata referenced a ChemFab  
14 engineer who roughly estimated 100 pounds of PFOA  
15 emitted from each of the 11 stacks per year or  
16 1100 pounds per year, did you ask Mr. Cannata for the  
17 name of that ChemFab engineer?

18 A. I believe we did not.

19 Q. Did you ask what facility the engineer  
20 worked in?

21 A. I did not.

22 Q. Did you ask when the engineer worked at that  
23 facility?

24 A. I did not specifically ask that, no.

25 Q. Did you ask when the conversation took place

1 with Mr. Cannata?

2 A. No, I don't think we specifically asked  
3 that. It's -- my recollection is is that it was a  
4 recent understanding through their process and what  
5 they were going through that they -- they were able to  
6 gather that information, but I don't think I  
7 specifically asked him when exactly he talked to this  
8 engineer.

9 Q. How did this engineer perform his rough  
10 estimate of PFOA emissions?

11 A. I have no idea.

12 Q. Did you ask Mr. Cannata that?

13 A. I did not.

14 Q. Why did this engineer perform a rough  
15 estimate of PFOA emissions?

16 A. I do not know.

17 Q. Did you do anything to independently verify  
18 that the information Mr. Cannata provided to you is  
19 accurate?

20 A. I did not.

21 Q. Let me mark for you Exhibit 5. So when you  
22 were having this conversation -- strike that.

23 During the course of your investigation on  
24 the issues addressed in your report and preparation of  
25 your report, did you take notes in this case?

1           A.     Yes.

2           Q.     And you understand that some of what I  
3 believe are your handwritten notes were --

4           A.     Yes.

5           Q.     -- were produced in this case. I'm going to  
6 mark as Exhibit 5 a document that does not have Bates  
7 numbers, but that I believe would be a copy of your --  
8 your notes.

9           A.     Yeah, those are ...

10          Q.     Do you recognize those?

11          A.     Yeah, I do.

12                 MR. DAVIS: This appears to be what we  
13 produced.

14                 (EXHIBIT 5 WAS MARKED FOR IDENTIFICATION)

15 BY MR. CURRAN:

16          Q.     So taking a look at these notes that are  
17 marked as Exhibit 5, do these appear to be notes that  
18 you took in connection with your preparation of your  
19 report?

20          A.     They're -- they're notes I took in  
21 preparation for doing my analysis, yes.

22          Q.     Now, the first several pages of Exhibit 5, I  
23 believe, are notes from the call you had with  
24 Mr. Cannata. Is that right?

25          A.     Yes.

1 Q. There is a reference here to Matt Chapman.

2 Now --

3 A. Ah.

4 Q. -- what's your understanding of --

5 A. Yes.

6 Q. -- Matt Chapman -- who Matt Chapman is?

7 A. I believe he's an attorney for the DEC.

8 Q. And was anyone else present other than

9 yourself, Mr. Hopke, Mr. Chapman, and Mr. --

10 A. Cathy Dare was on this phone call, too.

11 Q. Okay. And other than Ms. Dare, Mr. Cannata,  
12 yourself, Mr. Hopke, and Mr. Chapman, anyone else on  
13 the call?

14 A. As far as I know, no, unless they had  
15 somebody else on that side that didn't speak.

16 Q. Do you believe that these notes are an  
17 accurate reflection of the conversation?

18 A. I do.

19 Q. And if you had been told how a former  
20 ChemFab engineer made an estimate or how Mr. Cannata's  
21 team had conducted their analysis, do you expect those  
22 details would have been included in your notes?

23 A. If you had provided them, yes.

24 Q. So I think you testified that in your  
25 analysis -- strike that.

1           In your report, you say that you assumed  
2 continuous operation at .15 pounds per hour from 11  
3 stacks. Is that right?

4           A. Yes, point -- I think .015 would have been  
5 the --

6           Q. Okay.

7           A. Because we went the order of magnitude less,  
8 .015.

9           Q. So you took an emission rate, and you  
10 multiplied that rate -- strike that.

11           You took an emission rate from a single  
12 tower, and you then multiplied that by 11 to arrive at  
13 your overall facility emission rate. Is that --

14           A. For the middle scenario, correct.

15           Q. For the one -- for the 1,000 pounds for your  
16 scenario?

17           A. That's correct.

18           Q. Now, you chose 11 because you considered  
19 that to be -- well, strike that.

20           Can you explain to me why you chose 11?

21           A. It was when I was collecting the information  
22 and what I saw in the document, historical permitting  
23 documents, I came up with 11. And, again, it was  
24 difficult to follow what tower was where. There  
25 seemed to be some contradictory bits of information

1 on -- on what tower was existing when or how they were  
2 built.

3 So, again, I -- I may have combined two  
4 towers that was actually maybe two separate stacks  
5 possibly, but that was my best estimate of what --  
6 what -- how the facility was.

7 Q. What steps did you take to determine how  
8 many emissions points there actually were from the  
9 facility at various times?

10 A. Reviewing primarily historical permitting  
11 documents.

12 Q. Now, you applied your -- strike that.  
13 You assumed 11 stacks in continuous  
14 operation --

15 A. Yes.

16 Q. -- for every year of operation from 1978 to  
17 2002. Correct?

18 A. Well, yes, but for -- really for every year  
19 of operation for the five years that I modeled in the  
20 analysis.

21 Q. Do you believe that there were -- it's fair  
22 to assume that there were always 11 towers operating  
23 at the Water Street facility?

24 A. No, I know there wasn't. I know that they  
25 moved from the Northside Drive facility to Water



1 Street and then continued to expand from there and  
2 adding stacks and towers.

3 Q. You'd agree that it wouldn't be accurate to  
4 model emission rates from non-operational towers.  
5 True?

6 A. I would agree that it wouldn't be -- repeat  
7 the question, please.

8 Q. Sure. You'd agree it wouldn't be accurate  
9 for an -- an air emissions model to assume constant  
10 operation from a tower that's not operating. Fair?

11 MR. DAVIS: Object to the question. You may  
12 answer.

13 THE WITNESS: Okay. I -- yeah, typically if  
14 it's not operating, you wouldn't model it, no.

15 BY MR. CURRAN:

16 Q. The -- you mentioned that you were  
17 attempting to model five years of data. Which five  
18 years were you attempting to model?

19 A. 2006 to 2000 -- through 2010.

20 Q. Now, I believe the 2006 to 2000 --

21 A. Yeah.

22 Q. Strike that. Okay.

23 So 2006 to 2010, those are the dates that  
24 you attempted to model for emissions from the -- the  
25 Northside Drive facility -- I'm sorry, strike that.

1           2006 to 2010 were the years that you tried  
2           to model for emissions from the North Bennington  
3           facility?

4           A.     From -- yes.

5           Q.     What -- what year did the Northside -- I'm  
6           sorry. Strike that.

7                     What year did the North Bennington facility  
8           cease operations?

9           A.     As I understand, 2001.

10          Q.     Why were you trying to model outputs from  
11          the North Bennington facility in the period where it  
12          wasn't operating?

13                    MR. DAVIS: Object to the question.

14                    THE WITNESS: What the 2006 to 2010 is,  
15          representative meteorological data that has been  
16          processed for input into AERMOD. So in my  
17          estimation, this meteorological dataset works  
18          well whether it is applied to the time the  
19          facility was operating historically or during the  
20          period of 2006 to 2010.

21          BY MR. CURRAN:

22          Q.     So you were attempting to model the air  
23          emissions from these facilities during their entire  
24          periods of operation. Correct?

25          A.     I was attempting to model five years of

1 operation -- well, I take that back. I was modeling a  
2 typical -- yeah, it -- it was the operation of the  
3 facility continuously with five years of  
4 meteorological data.

5 Q. You used five years of meteorological  
6 data -- strike that.

7 Can I call it wind data?

8 A. That's -- that's fine.

9 Q. Okay. You were -- you were attempting to  
10 use five years of wind data as a proxy for weather  
11 over the full course of operation for the Bennington  
12 and North Bennington facilities?

13 A. That's correct.

14 Q. And using those five years of wind data, you  
15 modeled PFOA emissions from 11 towers over the full  
16 course of operation for those two facilities. Fair?

17 A. That's correct.

18 Q. Now, when you were modeling the full course  
19 of operations, for example, on Water Street from 1978  
20 to 2002, you used five years of wind data from 2006 to  
21 2010, and you used the assumption that 11 stacks were  
22 operating 24/7, 365. True?

23 A. As I recall, yes. Yeah, there was no --  
24 yes. You said Water Street. Correct?

25 Q. That's correct.

1           A.     Okay.

2           Q.     Now, why did you decide to assume that 11  
3     towers were operating 24/7, 365, from 1978 to 2002 in  
4     assembling your air emissions model for Water Street?

5           A.     I guess I should have been clear maybe in my  
6     answer. I modeled five years, so basically what I'm  
7     assuming in this analysis is that the facility was  
8     operating with 11 stacks for five years in this  
9     analysis, so it's not an accumulative-type analysis  
10    for the whole -- from 1978 to 2001.

11          Q.     I just want to make sure I understand that.  
12    What five years of operation were you trying to model  
13    here?

14          A.     I wasn't trying to model any specific five  
15    years. I was doing a unit emission rate analysis in  
16    using this five-year meteorological dataset.

17          Q.     So is it your testimony that you did not  
18    attempt to model the deposition impacts of the -- of  
19    emissions from the Water Street facility for its  
20    actual period of operation?

21               MR. DAVIS: Object to the question as vague.  
22    You may answer if you can.

23               THE WITNESS: I modeled the deposition  
24    impacts from the facility using a 2006 to 2010  
25    meteorological datasets for five years, using a

1 bound emission rate that basically encompasses  
2 the argument, if you will, of what the actual  
3 emission rates were from the facility during that  
4 time on an annual basis.

5 BY MR. CURRAN:

6 Q. Which years of operation at Water Street did  
7 you attempt to model?

8 A. I modeled more likely the -- the facility as  
9 it was in the latter years, in the peak, probably --  
10 the represent -- my model input represents how the  
11 facility was that was built out after -- and I don't  
12 know the last time the RS tower was added. It was, I  
13 think in maybe '97, somewhere around there, so it was  
14 like -- more like the last few years of the existence  
15 of the facility as it was finally constructed.

16 Q. So in your opinion, your model does not  
17 offer a model of cumulative deposition impacts for the  
18 period of operation for the Water Street facility?

19 A. No, it does not.

20 Q. And your model does not attempt to offer  
21 cumulative deposition impacts for the Bennington  
22 facility?

23 MR. DAVIS: Object to the question. You may  
24 answer if you can.

25 THE WITNESS: Okay. No, it's a

1 deposition -- an annual averaged deposition based  
2 on the facility input as it was constructed.

3 BY MR. CURRAN:

4 Q. And you weren't attempting to model the  
5 annual deposition for any period other than the last  
6 five years of operation?

7 MR. DAVIS: Object to the question.

8 THE WITNESS: That's correct. It was -- it  
9 was an analysis of -- of deposition as it was  
10 constructed in -- mostly within the last, you  
11 know, handful of years that it was -- it was in  
12 operation.

13 BY MR. CURRAN:

14 Q. Your model, assuming 11 stacks in continuous  
15 operation, would not be an accurate proxy for the  
16 facility in earlier years of operation when perhaps  
17 only five stacks were operational. True?

18 A. Possible -- I --

19 MR. DAVIS: Let me get my objection first.  
20 You may answer.

21 THE WITNESS: All right. So that's correct,  
22 I didn't do a -- a chronological analysis of one,  
23 three stacks, five stacks, and then 11 stacks.  
24 It was an assumption of -- it was our input of  
25 the facility as it was constructed in the latter

1           years when it was operating at its highest,  
2           highest production rate, as I understood.

3           MR. CURRAN:   Okay.   We've been going about  
4           an hour.   Why don't we take a break.

5           THE WITNESS:   Okay.

6           THE VIDEOGRAPHER:   We're off the record at  
7           11:11 a.m.

8           (RECESS TAKEN)

9           THE VIDEOGRAPHER:   We are back on the record  
10          at 11:28 a.m.

11       BY MR. CURRAN:

12          Q.    Mr. Yoder, we were discussing your three  
13          different emissions scenarios.   I want to talk about  
14          your 10,000-pound-per-year emission scenario.   In  
15          your -- in your own words, why did you use  
16          10,000 pounds per year as your upper bound?

17          A.    Well, this was relying on Phil Hopke's  
18          expertise in the area of what he thought was going on  
19          in the process with respect to the PFOA emissions, you  
20          know, data collected, that he was reviewing on the  
21          dispersions and amount of PFOA.   So in his estimate,  
22          as we put in -- as I put in here, was that it was more  
23          likely it could potentially be if the emissions were  
24          evaporated or the PFOA was lost out of the process in  
25          the bake -- in the drying zone, which is the first

1 zone it sees before the baking and sintering, that we  
2 would potentially have emissions upwards, you know,  
3 7,000 pounds a year.

4 So that was -- this, then, was kind of a  
5 little bit of an arbitrary selection of framing it up  
6 with the 10,000 pounds, kind of like we did on the  
7 lower end, picking a number that was actually lower  
8 than what Barr believed was being emitted.

9 Q. So I believe Dr. Hopke says, and you quote  
10 at page 5 of your report --

11 A. Uh-huh.

12 Q. -- that in his analysis, if there was no  
13 destruction of PFOA and no reduction by the abaters --

14 A. Yeah.

15 Q. -- the average PFOA emissions would have  
16 been nearly 3,000 pounds per year.

17 A. Right.

18 Q. Tell me, how did you get from 3,000 pounds  
19 per year to 10,000 pounds per year?

20 A. Well, then again, if the concentration of --  
21 so continuing on, with going on with an -- an upper  
22 end of it, the concentration of the APFO and  
23 dispersion was taken from them as the essence instead  
24 of the -- the 2,000 ppm used by Barr, then it could be  
25 up to 7,000.



1           So, again, I'm -- I'm going up -- that's  
2           just kind of a step before the 7,000, and the 10,000  
3           was kind of the -- the upper bound that we selected.

4           I mean, there was times we -- and I can't --  
5           I don't have it cited here, but we were running some  
6           numbers where it could have been even more than  
7           10,000. It was -- so that's -- so it was what we just  
8           kind of -- where we kind of stuck the fork in it for  
9           the upper bound.

10          Q.    You'd agree that Dr. Hopke's analysis that  
11               you quoted here resulted in 3,000 pounds per year.  
12               Correct?

13          A.    Yeah, yeah, 'cause I -- yeah, I quoted here,  
14               so I believe that what he did was accurate.

15          Q.    So if Dr. Hopke is settling at 3,000 pounds  
16               per year, why do you settle more than three times  
17               higher than that at \$10,000 pounds per year?

18          A.    And, again --

19               MR. DAVIS: Object to the question. That  
20               misrepresents Hopke's testimony.

21               THE WITNESS: Yeah. So, again, based on  
22               what I'm discussing here, is that this was -- it  
23               moved towards something even higher, in more like  
24               7,000 pounds, possibly even higher than 10,000,  
25               which is why we went with 10,000 pounds, not

1           3,000.

2       BY MR. CURRAN:

3           Q.     Do you stand by 10,000 pounds per year as,  
4     in your -- in your opinion as a scientist, the  
5     appropriate, most accurate upper bound to use in this  
6     analysis?

7           A.     Relying on Phil Hopke's estimation on -- on  
8     potentially what was going on in the process and the  
9     concentrations of the PFOA and the amount that was  
10    used, yes.

11          Q.     And if Dr. Hopke concluded that 3,000 was  
12    the appropriate upper bound, would you disagree with  
13    his analysis?

14          A.     Likely not because it's his area of  
15    expertise digging into that side of things, not mine.

16          Q.     If Dr. Hopke were to conclude that 3,000  
17    pounds per year is the appropriate upper bound to use,  
18    how would that change your opinions in this case, if  
19    at all?

20          A.     What I stated at the back, probably --  
21    probably not. It wouldn't change really.

22          Q.     So your opinions in this case wouldn't  
23    change if the upper bound that should be used was  
24    higher or lower?

25          A.     No.

1 Q. And is it your testimony that your opinions  
2 in this case wouldn't change if the lower bound that  
3 you've used was higher or lower?

4 A. And lower than the lower bound, I would  
5 say -- I would still say no. I'd expect it would  
6 probably have the same results, same -- the same  
7 venue.

8 Q. And why is that?

9 A. I believe that their -- the PFOA was  
10 deposited in the area. You know, where you're seeing  
11 well concentrations above the 20 PPT, the modeling to  
12 me demonstrates that there was deposition of PFOA in  
13 that area.

14 Q. You mentioned wells there.

15 A. Yeah.

16 Q. Do you think it's scientifically valid to  
17 compare soil deposition with -- with water sampling  
18 results?

19 A. You're asking the wrong guy. I'm an air  
20 person, not -- not a soil/water person.

21 Q. So you have no opinion on whether water  
22 sampling should be used as a check against air  
23 deposition and the soil?

24 A. I didn't -- I didn't -- I can't answer that  
25 because, again, it's -- it's -- I looked at where the

1 deposition was and not how it was tied to anything,  
2 some service.

3 Q. And you mentioned that you're seeing well  
4 concentrations above 20 parts per trillion, and that  
5 modeling demonstrates that there was deposition of  
6 PFOA in that area.

7 THE COURT REPORTER: Deposition of?

8 MR. CURRAN: Sorry, deposition of PFOA in  
9 that area.

10 BY MR. CURRAN:

11 Q. I want to make sure I understand your  
12 testimony.

13 A. Okay.

14 Q. Are you saying that your opinion wouldn't  
15 change in this case regardless of movement on the  
16 lower and upper bounds --

17 A. Well --

18 Q. -- because -- because you have seen well  
19 sampling data in the area?

20 A. I'm -- no, I probably -- if that's the way I  
21 said it, I -- that's -- that's not what I meant. I'm  
22 talking about what the model results would show me.  
23 Now, of course, you say on the low end. Of course,  
24 you can go down to something, obviously, much, much  
25 lower where you wouldn't see -- likely see much, if

1 any, deposition.

2 So, you know, I don't know what you mean by  
3 going lower, but based on the -- the three scenarios  
4 that I've modeled, I see deposition in the areas  
5 around the Saint-Gobain facility, which include,  
6 according to the drawing, of monitored data in those  
7 locations.

8 Q. Now, your report says that in order to  
9 simplify your approach, you're going to use the stack  
10 arrangement and physical parameters at the 2002 plant  
11 closure --

12 A. Right.

13 Q. -- for the full period of your analysis. Is  
14 that right?

15 A. But, again, it was just a -- a unit emission  
16 rate, so you can take that unit emission rate down to  
17 1968 or -- or '78 when they moved the facility there,  
18 so it's linear. You can -- you can -- you can go  
19 either direction, umm.

20 Q. You -- let me make sure I understand that,  
21 sir. You're saying that you can use your average  
22 emission rate modeled for the 2002 operating  
23 conditions and use that to approximate 1968 emissions?

24 A. Well, you can -- you can use the results,  
25 and, again, it's a unit emission rate, so it's a pound

1 per hour per -- microgram per cubic meter, or per gram  
2 per meter squared, or gram per -- however you want to  
3 do it, a unit emission rate deposition. Then you can  
4 apply whatever emission rate you want to to come up  
5 with a deposition rate.

6 So then you can go back to, for example,  
7 when they first moved there and whatever emission rate  
8 you want to apply there and -- and literally bring it  
9 to -- so you can -- it works that way.

10 Now, so ... There's flexibility with using  
11 the -- the unit emission rate, which is why I did it,  
12 because of what we're trying to figure out as far as  
13 actual emissions and where it could fall.

14 Q. And what were you trying to figure out in  
15 terms of actual emissions in your report?

16 A. I wasn't really trying to figure out  
17 anything in actual emissions. I was just modeling the  
18 emission rates.

19 Q. And why were you modeling the unit emission  
20 rate?

21 A. Because of where -- and because of what I  
22 said earlier in the fact that it's under debate as to  
23 what actually was emitted from the facility.

24 Q. During the break just now, did you speak to  
25 your counsel?

1 A. I did.

2 Q. What did you discuss?

3 A. Just -- just general -- just answering the  
4 questions that you -- basically, listen to the  
5 questions that you ask me and answer the questions.

6 Q. Anything else?

7 A. There was some discussion that kind of  
8 helped me remember 'cause you were trying to bring me  
9 into or at least tie the -- how I modeled it versus  
10 how the facility was historically, and talking to --  
11 through it with him was refreshing my memory on how it  
12 was -- how I approached it and that it is translatable  
13 across the years, so that was pretty much it.

14 Q. During the deposition --

15 A. There wasn't any direction from him.

16 Q. During the deposition break today, you  
17 discussed the substance of your testimony and the  
18 substance of your report. True?

19 A. During -- I'm sorry. Repeat the question.

20 Q. During the break we just took from the  
21 testimony of this deposition, you discussed with your  
22 counsel the subject of your testimony.

23 A. Mostly just how I was doing.

24 Q. Anything else you discussed?

25 A. No, not really.

1 Q. You'd agree that the height that you used to  
2 model an emissions point is an important input for an  
3 AERMOD analysis. True?

4 A. I guess most every AERMOD analysis, it is an  
5 important point --

6 Q. Fair to say --

7 A. -- important point.

8 Q. I'm sorry.

9 A. Correct.

10 Q. Is it fair to say that in general, the --  
11 the higher the emissions point, the further  
12 particulate emissions will travel?

13 A. In general, yes.

14 Q. What did you do to determine the appropriate  
15 height for emissions in your analysis here?

16 A. Again, pulled information from historical  
17 permitting documents for the facility, which included  
18 a -- a three-dimensional hand sketch from -- actually,  
19 I think Saint -- or ChemFab provided to the State.

20 Q. Now, if your assumptions on the height of  
21 various emission points were higher than the average  
22 height of those emissions points, what would the  
23 impact be on your results?

24 A. Higher than the average?

25 Q. Strike that. If your emissions points in



1 your model were higher than the actual emissions  
2 points for the facility, what would the impact be on  
3 your model?

4 A. Depends on how far off I was.

5 Q. Can you explain?

6 A. Well, I mean, if you're only -- if -- if I  
7 was within a foot of what actually was there, then  
8 likely very little, if anything, to the results.

9 Q. And how big a difference would it take to  
10 have a meaningful impact on your results?

11 A. I don't know. You run the model, you know,  
12 to figure that out.

13 Q. Did you run the model to try and determine  
14 the impact on accuracy of your assumed heights and the  
15 actual heights of the stack emissions points?

16 A. I didn't know what the -- I -- I didn't know  
17 what the actuals were other than the information that  
18 I was able to get to -- to input in my model. I mean,  
19 the stack -- the stacks aren't there anymore, so.

20 Q. Uh-huh. Why did you decide to use the  
21 period of operational data that you did in forming  
22 your AERMOD analysis?

23 A. What period? What do you mean, which  
24 period?

25 Q. Strike that.

1           Why did you decide to use operating  
2 conditions at the time of the plant's closure as the  
3 operating conditions for your AERMOD analysis?

4           A.    It was the final -- or -- or it was the --  
5 the way the facility was constructed and the fact that  
6 I could use a unit emission rate, it can be somewhat  
7 translatable in -- to whatever emission rate you want  
8 to apply to it.

9           Q.    I'm asking a slightly different question.

10          A.    So, go ahead.

11          Q.    Why did you decide to use the -- the  
12 operating conditions at the time of the plant's  
13 closure for your analysis?

14          A.    Because it was operating that way before it  
15 closed.

16          Q.    Any other reason you chose to use the -- the  
17 final year of the plant's operation for your analysis?

18          A.    Not really, no. It was -- that was mostly  
19 what it was based on.

20          Q.    You were mentioning earlier that the height  
21 of stack emissions is important for analysis. I  
22 believe you even said earlier that also the exhaust  
23 volume or the exhaust rate --

24          A.    The --

25          Q.    -- was important.

1 A. The exit velocity, yes.

2 Q. The exit velocity?

3 A. Yes.

4 Q. Is it true that in general, the higher the  
5 exit velocity as it leaves an emissions point, the  
6 further the particulate will travel for deposition?

7 A. In general, yes.

8 Q. Is particle size also important for modeling  
9 particulate deposition?

10 A. It is.

11 Q. In general, do smaller particles travel  
12 farther than larger particles in particulate  
13 deposition analysis?

14 A. In general, yes.

15 Q. And so if you assume a larger particle size  
16 as part of your model, those particles will not travel  
17 as far as a smaller particle would?

18 A. In general, yes.

19 Q. Before this analysis, I believe you  
20 testified you hadn't worked with PFOAs specifically.  
21 Is that right?

22 A. That is correct.

23 Q. So what did you do to determine the  
24 appropriate particle size to use for PFOA particulate  
25 deposition modeling?

1           A.     Reviewed the Barton -- I think the thesis  
2     document of hers had the particle size distribution of  
3     APFO.

4           Q.     Why did you use that particular document?

5           A.     Well, that plus it -- she -- I believe she  
6     even states that APFO was a general family of -- of  
7     those compounds, which included APFO.

8           Q.     Why did you decide to use the Barton thesis?

9           A.     Or PFOA, I'm sorry.

10          Q.     Why did you decide to use the --

11                 THE COURT REPORTER:   Or PFOA?

12                 THE WITNESS:   Yeah, sorry, I -- I spoke  
13     wrong.   These acronyms.

14     BY MR. CURRAN:

15          Q.     Why did you decide to use the Barton thesis  
16     specifically as your reference?

17          A.     It was -- it was a -- to me, from my  
18     scientific opinion, was a -- an excellent fit in what  
19     she did for what we were looking at in -- in  
20     Bennington.

21          Q.     And did you evaluate and reject other  
22     analyses of PFOA size?

23          A.     No, I did not.

24          Q.     Was the Barton thesis the first reference  
25     that you considered that discussed PFOA size?

1           A.     It was, yes.

2           Q.     How did you find the Barton thesis?

3           A.     Again, there was, amongst our team, several  
4     technical journal articles that were passed around. I  
5     can't remember specifically who provided that one to  
6     me.

7           Q.     When you say "among our team," who are you  
8     referring to?

9           A.     Again, Phil Hopke and counsel and Cathy Dare  
10    was also doing some research for us, too.

11          Q.     In determining whether or not you would use  
12    the Barton thesis to identify a particle size for  
13    particulate deposition, did you consider the entire  
14    thesis?

15          A.     I -- no, for the most part, for what my  
16    analysis was, I was looking for things that fit to  
17    what I needed to input into the model.

18          Q.     And in determining what the Barton thesis  
19    spoke to for the things that you needed, for example,  
20    particle size, did you consider the entire thesis?

21          A.     I mean, I considered the entire thesis as a  
22    good -- as an accurate and sound scientific work  
23    for ...

24          Q.     What about the Barton thesis made it sound  
25    scientific work for determining particle size?

1           A.     She was -- she was measuring, modeling APFO,  
2     and I may have some of the specific compounds as I'm  
3     talking off the top of my head, but her -- and her  
4     work was in line with, again, the same compound that  
5     we were simulating from Bennington.

6           Q.     Was it important to you that the same  
7     compound that you were addressing in Bennington be  
8     addressed by your reference material for particle  
9     size?

10          A.     Yes.

11          Q.     Why was that important?

12          A.     You know, as you're going to model  
13     especially particulate deposition, that particle size  
14     distribution and for calculating the input of the  
15     model was important.

16          Q.     Why is it important to have an accurate  
17     particle size figure for particulate deposition  
18     modeling?

19          A.     When I -- and when I say "accurate," I mean  
20     a lot of times it's as best -- as best as you can get  
21     your hands on. Sometimes when we do modeling, we  
22     don't have the exact information that we need for a  
23     particular compound that we're modeling, but -- and  
24     sometimes -- and, again, usually going through a  
25     process of a protocol as an example for an air

1 dispersion modeling analysis, there's been some  
2 agreement with the regulatory authority that's going  
3 to be reviewing it that, yes, we agree that this would  
4 be a good fit.

5 So in similar type of analysis, approach,  
6 I'm looking for what I think is the best, you know,  
7 input for the model and for representing the same  
8 compound.

9 Q. So you say you're looking for the best input  
10 for the model to represent the compound. You say it's  
11 best modeling practice to use the most accurate or  
12 most robust analyses for that given input. Fair?

13 A. Yes.

14 Q. For particulate size, what made Barton's  
15 analysis, in your opinion, the most accurate,  
16 appropriate proxy for particle size in your inputs?

17 A. Again, she was -- her study was on the same  
18 family of -- of compounds as we were in our analysis.

19 Q. Are you familiar with AERMOD method 1 and  
20 method 2?

21 A. I am.

22 Q. What's the difference between AERMOD method  
23 1 and method 2?

24 A. The method 1 is the default setting for EPA,  
25 modeling the deposition of particulate matter, and

1     it's generally for a more coarser set of particles, or  
2     at least where the larger -- larger fraction in the  
3     particle size distribution is in more of the coarse  
4     category, wherein method 2 is an EPA non-regulatory  
5     default option and AERMOD input for a finer, smaller  
6     particle.

7           Q.     Now, in your analysis, you used the  
8     non-default option?

9           A.     That's correct.

10          Q.     That -- that was method 2?

11          A.     That's correct.

12          Q.     Why did you select the non-default method 2  
13     option for your AERMOD analysis?

14          A.     Again, looking at Barton's particle size  
15     distribution is a very small particle, from, like -- I  
16     think it was 7 microns down to .28. So it's -- when a  
17     larger percentage of those particles are less than --  
18     this is back to the method 2 -- is less than the  
19     2.5 microns, it's -- I saw it as a more suitable  
20     approach to simulating the particles in this analysis,  
21     the particle emissions.

22          Q.     You say in your report on page 4 that you  
23     interpret Barton's data as measuring fine particulate  
24     matter with diameter ranges below 4 microns. Is that  
25     right?



1           A.     Okay, yes.

2           Q.     And I believe you're relying on particle  
3 size data in the Barton report -- Barton thesis --

4           A.     Yes.

5           Q.     -- at page 29?

6           A.     Yes.

7           Q.     And you say in your report that the  
8 representative mass mean particle diameter required  
9 for method 2 input was calculated from the Barton  
10 particle size distribution of PFO.

11          A.     That's correct.

12          Q.     How did you do that?

13          A.     It was a calculation -- that's my table,  
14 table 4, and it's a calculation, and Dr. Hopke helped  
15 me with this. I will say that also. And such  
16 calculation of the natural log of the -- the range of  
17 the geometric mid-point of each of the particle size  
18 distribution categories.

19                 And that is multiplied by a calculation of  
20 the exponential of the -- of that pre -- this  
21 calculation I just mentioned, the natural log. And  
22 then it's -- you basically calculate a -- a weighted  
23 mid-point, which is summed, and that divided by 100 is  
24 the mean mass particle -- particle diameter in  
25 microns.

1 Q. Let me take a look -- I'll mark as --

2 A. And that's a method 2 input. Sorry, adding  
3 that.

4 Q. So, I'm sorry. What was the method 2 input  
5 that you're referring to?

6 A. That this --

7 Q. The result --

8 A. That mean mass particle.

9 Q. Yeah.

10 A. That's an -- or particle diameter.

11 Q. So the 1.157 mean mass particle diameter,  
12 that's what you used as your method 2 input?

13 A. Yes.

14 MR. CURRAN: I'll mark as the next exhibit  
15 the Barton thesis.

16 (EXHIBIT 6 WAS MARKED FOR IDENTIFICATION)

17 MR. DAVIS: Exhibit 6?

18 THE COURT REPORTER: Yes.

19 BY MR. CURRAN:

20 Q. So did you review the -- is it -- strike  
21 that.

22 Is this the thesis that you reviewed in  
23 preparing your report?

24 A. Yes.

25 Q. And the data that you relied on, I believe

1 it's on page 29?

2 A. That's correct.

3 Q. So you relied on the data in table 2-4. Is  
4 that right?

5 A. That's correct.

6 Q. And why was it that you decided to rely on  
7 this data for particle size?

8 A. And, again, it was -- it -- it was -- what I  
9 found was an aha moment of finding the PFOA --

10 THE COURT REPORTER: I'm sorry, what I found  
11 was an?

12 THE WITNESS: Aha, I said "aha moment,"  
13 like, oh, here's what I'm looking for, in -- in  
14 her thesis of PFO, particle size distribution  
15 information that I needed to -- for my input.

16 BY MR. CURRAN:

17 Q. And in deciding to use this, did it matter  
18 to you how the data was collected or how this -- this  
19 average particle size was calculated?

20 A. I mean, of course it matters from a  
21 scientific standpoint. So my understanding and basis,  
22 what -- what this is and how it's been published, that  
23 it's gone through the scientific scrutiny that it's  
24 needed to go through for it to be accurate data and  
25 presented in this -- in this document, so I consider

1     it reliable. I did not go back and -- 'cause it's not  
2     my area of expertise, and I don't know exactly how  
3     she -- she measured it.

4           Q. Did you look at the thesis to determine how  
5     this data had been collected or how this analysis was  
6     conducted?

7           A. I generally -- yeah, I generally peruse  
8     through some of the upfront stuff in her -- in her  
9     approach, yes.

10          Q. And take a look back at page 14, section 22  
11     of this thesis. Did you consider the description of  
12     experimental methods that were used by Barton for her  
13     thesis?

14          A. Not really, no.

15          Q. And so it didn't matter to your analysis how  
16     many sampling events occurred or where in order to  
17     determine the particle size?

18          A. No. I needed the particle size  
19     distribution, and I was having difficulty finding it  
20     anywhere else, so.

21          Q. If you were to -- so -- strike that.

22                 It says here on page 17 of the thesis that  
23     six sampling events were conducted over a ten-week  
24     period from November 2003 to January 2004 in order to  
25     collect this data.

1 Do you see that?

2 A. I see -- I see that.

3 Q. Do you consider that to be a sufficient  
4 sample size to calculate particle size?

5 A. As far as I understand and -- and what this  
6 document is and -- and what it presents, I would say  
7 yes.

8 Q. If Barton had data from a longer sampling  
9 period or a more robust set of sampling events, would  
10 you want to consider that data?

11 A. Only if she provided the particle size  
12 distribution that I was interested in.

13 Q. You wouldn't be interested in data from a  
14 longer sampling period to get a more accurate picture  
15 of particle size?

16 A. Of course I would consider it, yes.

17 Q. Did you consider whether Barton offered  
18 additional data on particle size from a longer  
19 sampling period in conducting your analysis?

20 A. I did not see any information, not that she  
21 doesn't have it anywhere, but I did not see it  
22 anywhere.

23 Q. So you did not make a conscious choice to  
24 ignore alternative --

25 A. No.

1 Q. -- particle size figures in -- in forming  
2 your AERMOD inputs?

3 A. No, I did not.

4 Q. So this particle size data in table 2-4  
5 that's described on page 17 is coming from six  
6 sampling events; that's the data that you used?

7 A. Yes, it appears so. That's where it falls  
8 in -- moves into page 29 where that data is presented,  
9 so yes.

10 Q. Take a look at page 85.

11 A. Eighty-five.

12 Q. On page 85 where Barton describes a total of  
13 10 Tisch Model High Volume Five-Stage Cascade  
14 Impactors being deployed at nine locations and  
15 co-located samplers were placed at a fence line  
16 location where samples were collected for 24 hours.

17 Do you see that?

18 A. Oh, yes, I do now.

19 Q. So here in this period of sampling between  
20 August 2005 and January 2006 -- oh, strike that.

21 You see that for the period described on  
22 page 85, there are ten receptors at each of nine  
23 locations. Correct?

24 A. Trying to confirm this, what you're telling  
25 me. I'm -- I'm having trouble locating it here. Oh,

1 nine locations, so yes.

2 Q. So 90 samples --

3 A. Ten, yeah.

4 Q. -- total, 10 receptors, 9 locations each.

5 A. Yes.

6 Q. If I told you that you could take data from  
7 a sample size of 6 samples or a sample size of 90  
8 samples, all other things being equal, as a scientist,  
9 which would you prefer?

10 MR. DAVIS: Object to the form of the  
11 question.

12 THE WITNESS: So rephrase the question for  
13 me.

14 BY MR. CURRAN:

15 Q. If I told you that you could use data from a  
16 sample size of 6 samples or a sample size of 90  
17 samples to determine particle size, as a scientist,  
18 which of those would you prefer?

19 A. I mean, you're asking me things about -- you  
20 know, this is really not my area of expertise, so, to  
21 answer your question.

22 Q. So it's your testimony that in your field,  
23 there is no accepted preference for larger sample  
24 sizes over smaller sample sizes?

25 A. Well, I believe there is.

1 Q. The data in section 4, I believe it's  
2 described on page 87 in table 4-1. Did you consider  
3 the data in table 4-1 before you prepared your report?

4 A. I did not.

5 Q. Did you have an opportunity to review the  
6 entire Barton thesis --

7 A. I --

8 Q. -- before you prepared your report?

9 A. I'm sure, yes, I had an opportunity to, yes.

10 Q. No one instructed you not to review the  
11 entire --

12 A. No.

13 Q. -- Barton thesis?

14 A. No.

15 Q. Now, this data indicates that 67 percent of  
16 the PFOA particles collected were smaller than 2.58  
17 microns. Is that correct?

18 A. 2.58 microns.

19 MR. DAVIS: If you can take your time to  
20 review this if you --

21 THE WITNESS: Yeah.

22 MR. DAVIS: -- if you need to.

23 THE WITNESS: I need a calculator. I don't  
24 have my calculator with me.

25 THE VIDEOGRAPHER: Watch your microphone



1           there.

2                   THE WITNESS:   Oh, thank you.

3       BY MR. CURRAN:

4           Q.    Perhaps I could direct you to the third  
5       column, Cumulative percentage less than particle size.

6           A.    Oh, yeah, there you go.   Okay.

7                   THE COURT REPORTER:   Cumulative percentage?

8                   THE WITNESS:   I was actually --

9       BY MR. CURRAN:

10          Q.    I'm sorry, Cumulative percentage less than  
11       particle size.   In the left-hand column -- oh, strike  
12       that.

13                   In the left-hand column in table 4-1, you'll  
14       see that Barton describes the particle diameter in  
15       microns.   Is that correct?

16          A.    Oh, you're asking me a question.   I'm sorry.  
17       I thought you were still talking to her.

18          Q.    In -- in table 4-1 --

19          A.    Yeah.

20          Q.    -- you'll see that on the left-hand side,  
21       Barton describes the particle diameter in microns.

22          A.    Okay.

23          Q.    Is that correct?

24          A.    Yes.

25          Q.    And on the right-hand side of table 4-1,

1 Barton describes the cumulative percentage less than a  
2 particle size.

3 A. Okay.

4 Q. Am I reading that accurately?

5 A. Yes.

6 Q. According to table 4-1, the cumulative  
7 percentage less than 2.58 microns is 0.67 percent --  
8 or 67 percent. Is that right?

9 A. That's correct.

10 Q. Did you consider this data before deciding  
11 to use method 2 in your AERMOD analysis?

12 A. I did not.

13 Q. And if this data is considered an accurate  
14 description of particle size, you'd agree that your  
15 model doesn't use the most accurate particle size.  
16 Fair?

17 MR. DAVIS: Object to the form of the  
18 question.

19 THE WITNESS: I believe what she presented  
20 up front is still accurate. I just -- yeah,  
21 which is what I input.

22 BY MR. CURRAN:

23 Q. If the particle size that you used in your  
24 analysis is smaller --

25 A. Yeah.

1           Q.    -- than what the court concludes is the  
2 appropriate model particle size, what impact would  
3 that have on your results?

4           MR. DAVIS: Object to the form of the  
5 question, asks for speculation about what the  
6 court might conclude, which is very unlikely.

7           THE WITNESS: Yeah, I -- I don't know  
8 exactly. I'd have to run the model to really do  
9 a comparison.

10 BY MR. CURRAN:

11           Q.    In general, when -- I believe you testified  
12 that when particles are larger, they don't travel as  
13 far. Is that correct?

14           A.    In general, yes.

15           Q.    So in general, if you understated the size  
16 of a PFOA particle, that would have the impact of  
17 causing it to travel further into the atmosphere than  
18 it would if the particle size was actually larger.  
19 Fair?

20           A.    Potentially, yes.

21           Q.    And if a sufficient quantity of particles --  
22 strike that.

23                   If approximately 10 percent or more of the  
24 model PFOA particles have a diameter of 10 microns or  
25 larger, you'd agree that method 1 should have been

1       used.   Correct?

2           A.    I have to go back and look at the guidance  
3       document.   I can't remember the percentage breakdown,  
4       so I don't know.   I -- I'm not sure exactly, to answer  
5       that question.

6           Q.    You'd agree that particle size is an  
7       important determinator -- strike that.

8                    You'd agree that particle size is important  
9       when deciding whether to employ method 1 or method 2  
10      for AERMOD.   Yes?

11          A.    Yes.

12          Q.    Now, the Barton thesis was measuring  
13      particles at a facility in Parkersburg.   Is that  
14      right?

15          A.    That's my understanding, yes.

16          Q.    Why did you conclude that measuring  
17      particulates at the Parkersburg facility was a good  
18      proxy for particles in the area of the Bennington  
19      facility?

20          A.    Well, again, we were looking at the same  
21      class of compounds as a family and -- and, again, a  
22      similar analysis as it would be a good fit for -- for  
23      what I needed for my analysis.

24          Q.    Was the facility in Parkersburg processing  
25      PTFE?

1           A.    I do not know the specifics of their  
2    process.

3           Q.    Did you take any steps to determine whether  
4    the Barton thesis was sampling particles that were a  
5    good proxy for the particles that were potentially  
6    being emitted from Bennington?

7           A.    I did.

8           Q.    And what were those steps?

9           A.    Well, I mean, it was basically her  
10   description of the family of compounds that was in the  
11   same category, you know, that included PFOA.

12          Q.    Other than that, any steps you took to  
13   determine whether the measurements in Parkersburg  
14   were -- Parkersburg were a good proxy for -- well,  
15   strike that.

16                You mentioned fugitive emissions earlier.

17          A.    I did.

18          Q.    What are fugitive emissions?

19          A.    Oh, those are basically emissions that are  
20   not released from a -- a stack or a chimney and what  
21   we consider -- consider emission point.

22          Q.    Are fugitive emissions important for air  
23   deposition modeling?

24          A.    They can be, yes.

25          Q.    Why can they be important?

1           A.     Well, it's a different nature of emissions,  
2     so it's simulated differently in the model.

3           Q.     In your model, how did you -- well, strike  
4     that.

5                     Were there fugitive emissions from the North  
6     Bennington facility?

7           A.     Based on inspections and complaints, I  
8     understand there were, even though the facility was  
9     not permitted, as I understand, for those fugitive  
10    emissions.

11          Q.     How did you model those fugitive emissions?

12          A.     I did not model fugitive emissions. I  
13    modeled the facility as it was permitted to operate,  
14    and as a matter of fact, I believe one of the last  
15    stack tests that was done at the facility, there was  
16    no record of any fugitive emissions at that time, so  
17    it was intermittent, I guess. I don't know, and so it  
18    was not a -- I guess a normal form of emissions from  
19    the facility.

20          Q.     So in your opinion -- strike that.

21                     You did not model fugitive emissions of any  
22    sort --

23          A.     I --

24          Q.     -- from North Bennington facility?

25          A.     No, I did not, no.

1 Q. And you'd agree that fugitive emissions did,  
2 in fact, occur at the Bennington facility, the North  
3 Bennington facility?

4 A. Based on documents, yes.

5 Q. And, in fact, in reality, no facility can  
6 operate without any form of fugitive emissions of some  
7 sort.

8 A. Yes, they can.

9 Q. Okay.

10 A. Yeah.

11 Q. Describe that.

12 A. Well, you have completely enclosed  
13 processes, and they can definitely be engineered where  
14 you wouldn't have fugitive emissions.

15 Q. In your experience with permitting Wheeler  
16 (phonetic) set analysis, how do you normally deal with  
17 fugitive emissions from an industrial site?

18 A. Repeat the question because I didn't catch  
19 the first part.

20 Q. Sure. In your experience in industry  
21 modeling sites, how do you typically account for  
22 fugitive emissions from an industrial site?

23 A. Well, they would be, first of all, part of  
24 the -- the permitting process so they would be  
25 accounted for, and then through emission rate

1 estimation, depending on what the material is and  
2 what's being emitted, would be included in -- in  
3 whether it's -- it's permitted or modeled or anything.

4 Q. Now, in your analysis here, you did not  
5 attempt to calculate fugitive emissions from the  
6 Bennington or North Bennington sites.

7 A. No.

8 Q. Correct?

9 A. No.

10 Q. And you didn't adjust your model to account  
11 for any level of fugitive emissions. Correct?

12 A. I did not.

13 Q. You stated at page 3 of your report,  
14 Fugitive particulate emissions were excluded from this  
15 analysis.

16 A. That's right.

17 Q. You instead assumed that all emissions of  
18 PFOA left from the stacks.

19 A. That's true.

20 Q. Correct?

21 A. Yes.

22 Q. The stacks are the -- the highest point of  
23 the facility. Correct?

24 A. That's correct.

25 Q. So as a result of your assumptions, a higher



1     than actual amount of PFOA left the facility at its  
2     highest point and traveled the farthest. Is that  
3     fair?

4             MR. DAVIS: Objection to the form of the  
5     question. You may answer.

6             THE WITNESS: I -- so, again, I modeled the  
7     facility the way it was intended to operate and  
8     should have operated, as I understand, on a  
9     normal basis, and, yes, there was documented  
10    fugitives, but I had no idea from anything that I  
11    saw, even estimating how much it would have been.

12            So it could have had fugitive emissions, but  
13    it could have been a relatively small amount from  
14    the overall emissions of -- of PFOA from the  
15    facility.

16    BY MR. CURRAN:

17            Q. And rather than apply a discount rate for  
18    fugitive emissions, you -- your model assumed that all  
19    fugitive emissions actually were stack emissions that  
20    left from those highest emissions points. Correct?

21            A. That's correct, which -- and should have  
22    been the way it was normally, maybe normally operated  
23    through the course of the -- of the operation of the  
24    facility.

25            Q. And if the actual operation of the facility

1 was to have fugitive emissions, your model would take  
2 those fugitive emissions, emit them from a high stack  
3 point, and send them further than they actually  
4 traveled into the atmosphere.

5 A. It depends --

6 Q. Fair?

7 A. It depends on how much we're talking about.  
8 Again, we're talking how much -- how much -- how much  
9 is emitted from fugitives -- fugitively.

10 Q. And whatever that amount of fugitive  
11 emissions is, we can agree, your analysis assumed that  
12 it left from the highest point from the stack and  
13 traveled far into the atmosphere?

14 A. I did not include fugitive emissions, so,  
15 yes.

16 Q. Typically fugitive emissions would be  
17 deposited close to the facility because they have a  
18 low volume and potentially a low emissions point.  
19 Fair?

20 MR. DAVIS: Object to the form of the  
21 question. It's vague.

22 THE WITNESS: If you were bottling fugitive  
23 emissions, but other facilities -- again, it  
24 depends on the source. It depends on how the  
25 fugitive is -- is simulated in the model, but,

1           yes, in -- in general, yeah, it would be more ...

2       BY MR. CURRAN:

3           Q.     Generally fugitive emissions will come to  
4       rest closer to the source than emissions from a very  
5       high emissions point with a higher exhaust (sic)  
6       velocity.

7           A.     Generally, yes.

8           Q.     So if we assume that 10 percent of PFOA  
9       emissions from the facility left as fugitive  
10      emissions, how would that impact your analysis?

11          A.     I don't know. I'd have to do it, to run it  
12      to give you an answer.

13          Q.     If we're, for example, assuming that 1,000  
14      pounds are emitted per year through the stacks and we  
15      instead assume that 10 percent of those are fugitive  
16      emissions --

17          A.     Uh-huh.

18          Q.     -- so 900 pounds would instead be leaving  
19      from the -- the stack emission points?

20          A.     Okay.

21          Q.     And a hundred pounds would be leaving per  
22      year from fugitive emission points?

23          A.     Okay.

24          Q.     Is that something that you could have  
25      modeled?

1 A. Of course.

2 Q. And have you in the past modeled air  
3 deposition with some -- with some account for fugitive  
4 emission volumes?

5 A. It's been some time, but, yes, I have done  
6 particulate modeling.

7 Q. And why have you done that in some other  
8 models?

9 A. Why have I done what?

10 Q. Why have you modeled fugitive emissions in  
11 addition to stack emissions for some other deposition  
12 models that you've done?

13 A. Again, it was part of the permitting  
14 process, the facility. It was documented and  
15 estimated and engineered and permitted for those  
16 emissions.

17 Q. And did you believe that from a scientific  
18 standpoint, it was more accurate to model those  
19 fugitive emissions than to assume that they left  
20 through the stacks?

21 MR. DAVIS: Object to the vagueness of the  
22 question.

23 THE WITNESS: Yeah, again, you're --  
24 you're -- so, okay, so rephrase the question for  
25 me again, so. I'm trying to -- trying to answer

1           your question for this particular analysis, so.

2       BY MR. CURRAN:

3           Q.     In air models you have constructed where you  
4       modeled fugitive emissions in addition to stack  
5       emissions, did you believe that from a scientific  
6       standpoint, that was the most accurate choice, to have  
7       a model for the fugitive emissions and separately a  
8       model for the stack emissions?

9           A.     Again, I was simulating what the facility  
10      was permitted to do in operating normally. I have  
11      not -- in any recollection of mine, I've not modeled a  
12      facility based on incorrect operation, malfunctions,  
13      things like that.

14          Q.     So it's your testimony that your modeling  
15      typically does not attempt to determine real world  
16      emissions, but, instead, to simulate permitted  
17      emissions?

18          MR. DAVIS: Object to the form of the  
19      question.

20          THE WITNESS: No, it -- it is -- it's --  
21      it's simulating what the facility should be  
22      operating under the understanding between what  
23      was presented to the State and -- and what -- as  
24      the State understands the facility should be  
25      operating and as only that I would know.

1 BY MR. CURRAN:

2 Q. And are you referring to appropriate  
3 modeling techniques for the permitting process?

4 A. Yeah. And, again, in most cases, air  
5 dispersion modeling is for the permitting process.

6 Q. Outside of the permitting process, speaking  
7 as a scientist and an air modeler, is the most  
8 accurate way to construct an air model to assume that  
9 fugitive emissions leave from the stack points?

10 MR. DAVIS: Objection to the vague question.

11 THE WITNESS: So be more specific then, I  
12 guess.

13 BY MR. CURRAN:

14 Q. I'll repeat the question. Outside of the  
15 permitting process, speaking as a scientist and as an  
16 air modeler, is the most accurate way to construct an  
17 air model to assume that fugitive emissions actually  
18 leave from stack emission points?

19 MR. DAVIS: Same objection.

20 THE WITNESS: Again, it depends on the  
21 information that I have to build the model, so if  
22 I was -- specifically knew how much --  
23 specifically knew how much was emitted from a  
24 normal operation of the facility from a fugitive  
25 standpoint, then yes, you would model it that

1           way, but I didn't know that in this case.

2       BY MR. CURRAN:

3           Q.     Why did you decide to in this case use zero  
4       as your estimate for fugitive emissions?

5           A.     And, again, I did not -- I -- it was how the  
6       facility was supposed to be operated and what is the  
7       way I set it up in the model.

8           Q.     Is it your scientific belief that there were  
9       zero fugitive emissions from this facility?

10          A.     Well, I know there wasn't, but, again, I  
11       didn't know how to quantify it. I mean, 10 percent,  
12       50 percent, 3 percent?

13          Q.     Did you undertake any efforts to analyze the  
14       percentage of fugitive emissions from the facility?

15          A.     Not really because it was pretty obvious  
16       that there wasn't any information available, what it  
17       was.

18          Q.     Did you consider using an upper and lower  
19       bound for fugitive emissions from the facility?

20          A.     No.

21          Q.     Why did you decide not to consider using an  
22       upper or lower bound for fugitive emissions from the  
23       facility?

24          A.     And, again, I didn't know what -- I mostly  
25       modeled this facility based on normal operations, and

1 any kind of issue with maintenance or improper air  
2 pollution control application or whatever else was  
3 going on that was causing fugitive emissions, I didn't  
4 really know what they were, and as far as the amount  
5 goes and what to not allocate towards the stacks.

6 And, again, I go back to the other -- there  
7 were other inspections where there was nothing seen,  
8 so I didn't know how frequently it was -- it was  
9 emitting fugitives or not. It's -- it's -- it was  
10 just -- there wasn't any information.

11 Q. In the face of uncertainty over emission  
12 rates -- strike that.

13 In the face of uncertainty over fugitive  
14 emission rates, why did you decide not to use a lower  
15 and upper bound for those emissions when you were  
16 using a lower and upper bound for uncertain stack  
17 emissions?

18 A. And, again, normal operation was the PFOA  
19 coming out of the stacks, and that's the way I  
20 simulated the facility. That's the way I did the  
21 analysis.

22 THE VIDEOGRAPHER: Five minutes.

23 BY MR. CURRAN:

24 Q. Was the practical impact of assuming that  
25 fugitive emissions left through the stacks to increase



1 the amount of PFOA that your model would assume  
2 traveled into the atmosphere from the facility?

3 MR. DAVIS: Objection to the form of the  
4 question.

5 THE WITNESS: Yeah, rephrase the question  
6 for me, please. Ask it again.

7 BY MR. CURRAN:

8 Q. Was the practical impact of assuming the  
9 fugitive emissions left through the stacks to increase  
10 the proximity of PFOA emissions from the facility?

11 MR. DAVIS: Objection.

12 THE WITNESS: So are you asking me if I was  
13 trying to ...

14 BY MR. CURRAN:

15 Q. I'm asking what the practical numerical  
16 impact was --

17 A. Yeah.

18 Q. -- of the assumption. So if we assume that  
19 all fugitive emissions are emitted from the stack  
20 points, that will increase the -- the amount of model  
21 deposition at any given proximity from the facility.  
22 Fair?

23 A. Yeah, that's true. And as I understood it,  
24 the fugitive emissions should have been coming out of  
25 the stack anyway.

1           Q.     But I believe you also testified, sir, that  
2     you understood that they didn't. Is that correct?

3           A.     I understand, yes, there was reports that  
4     there was some record that they weren't.

5           Q.     When did you decide not to employ a fugitive  
6     emission rate in your model?

7           A.     But, again, I just -- as I just stated, I  
8     was simulating the model or the facility as it was  
9     permitted to operate.

10          Q.     And when --

11          A.     And I had no other information on what --  
12     you know, was it permitted for fugitives, and, you  
13     know, thou shall only emit this much on a fugitive  
14     basis. I did not have any information as to what that  
15     quantity would be.

16          Q.     When you're referring to -- well, strike  
17     that.

18                 Did you only use permanent application  
19     parameters for all of your other inputs?

20          A.     Yes, yes -- well, not all, no.

21          Q.     Which input --

22          A.     So, I mean, there are other inputs like --  
23     again, we're talking about particulate matter. That  
24     wasn't anything in the permitted documents. The  
25     meteorological data wasn't in the permitted documents.

1 So those are other inputs.

2 Q. And how about the volume of perfluorinated  
3 chemicals?

4 A. I'm sorry?

5 THE COURT REPORTER: How would the volume  
6 of?

7 MR. CURRAN: I'm sorry, the volume of  
8 perfluorinated chemicals.

9 THE WITNESS: I'm sorry. I don't  
10 understand -- what's the question?

11 BY MR. CURRAN:

12 Q. When you were trying to estimate the number  
13 of pounds per year --

14 A. Oh.

15 Q. -- of perfluorinated chemicals --

16 A. Yeah.

17 Q. -- did that come from a permit?

18 A. Well, no, because they weren't permitted to  
19 emit PFOA. It wasn't a regulated compound.

20 Q. So the amount of PFOA didn't come from a  
21 permit, but you did attempt to provide values for that  
22 in your model. Fair?

23 A. Yes, yes.

24 Q. But because the amount of fugitive emissions  
25 weren't listed in the permit, you didn't attempt at

1 all to capture the --

2 A. I, again --

3 Q. -- fugitive emissions?

4 A. So PFOA was not a regulated compound, so it  
5 wouldn't even have ever been in the permit, so most of  
6 my development of input was based on how the facility  
7 was permitted and how it was to normally operate.

8 Q. Where you knew that PFOA had a size and it  
9 wasn't listed in the permit, you found a number to use  
10 for PFOA size. Fair?

11 A. Fair.

12 Q. But when you knew that fugitive emissions  
13 occurred and you couldn't find that number in a  
14 permit, you didn't attempt to approximate the amount  
15 of fugitive emissions?

16 A. No. I mean, PFOA was emitted, so we're  
17 going back and doing an -- an analysis of an emerging  
18 compound, which may be regulated in the future. I  
19 don't know. So -- so I'm simulating that -- that  
20 particular compound as model input and had to rely on  
21 outside -- yes, outside information to get the  
22 scientific data I needed for input on that particular  
23 compound. But, yes, it's -- to me, it's two different  
24 things, so the fugitive stack thing.

25 Q. Talked to you earlier about wind data.

1 You'd agree that air modeling -- in air modeling, it's  
2 important to have accurate wind data. Is that fair?

3 A. Yes, I agree.

4 Q. And I believe you testified that you used  
5 five years of archived meteorological data from 2006  
6 to 2010 for your report. Correct?

7 A. Correct.

8 Q. And that data was meteorological surface  
9 data from the Bennington, Vermont, airport and upper  
10 air data from the Albany, New York International  
11 Airport. Is that right?

12 A. That's right.

13 Q. How close to the Bennington airport was the  
14 Water Street facility?

15 A. I believe it's only a couple of miles.

16 Q. And how close to the Bennington airport was  
17 the Northside Drive facility?

18 A. Probably close to about the same distance, I  
19 guess, going east of it.

20 Q. And what did you do to ensure that the 2006  
21 to 2010 data was an accurate representation of  
22 meteorological data at the Northside Drive facility  
23 between '68 and '78?

24 A. Okay. So repeat the question again for me.

25 Q. What did you do to ensure that the airport

1 meteorological data that you used from 2006 to 2010  
2 was an accurate representation of meteorological  
3 conditions at the Northside Drive facility between '68  
4 and '78?

5 A. So did I do a -- did I do a comparison of  
6 the meteorological data that I used versus actual  
7 meteorological data for the operation years of the  
8 facility. Is that your question?

9 Q. Well, what did you do, if anything --

10 A. Well.

11 Q. -- to ensure that the data you used was an  
12 accurate representation of conditions at Northside  
13 Drive between '68 and '78?

14 A. And -- and, again, I relied on the DEC, and  
15 I stated in there that I did not process the  
16 meteorological data. The DEC provided it to us. They  
17 have already -- they already did that. And it was, in  
18 their opinion, based on the fact they also did a  
19 similar analysis using the same meteorological data.

20 THE VIDEOGRAPHER: Counsel.

21 MR. CURRAN: We're going to go off.

22 THE VIDEOGRAPHER: We're off the record at  
23 12:27 p.m.

24 (LUNCHEON RECESS TAKEN)

25 THE VIDEOGRAPHER: We are back on the record

1 at 1:16 p.m.

2 BY MR. CURRAN:

3 Q. Mr. Yoder, during the lunch break, did you  
4 discuss the substance of your testimony with counsel?

5 A. We just had a nice lunch together and just  
6 discussed our parents.

7 Q. Was that a no?

8 A. Yes, that's a no.

9 Q. During the lunch break, did you discuss any  
10 testimony that you will give in this deposition?

11 A. No.

12 Q. Does your report that was marked as  
13 Exhibit 1 --

14 A. Yeah.

15 Q. -- together with your declaration that was  
16 marked as Exhibit 2, do those contain a full statement  
17 of your methodology?

18 A. Yes, I mean, the report definitely does.

19 Q. So there weren't any portions of your  
20 methodology that you omitted from your report?

21 A. No.

22 Q. Were there any steps that you took in  
23 forming your opinions that you omitted from your  
24 report?

25 A. Okay. Yes, I mean, so the figures that I

1 developed, I mean, there was a lot of out -- you know,  
2 other softwares that I used to get to the point where  
3 I can make that figure. So, yeah, I didn't fill in  
4 those details or provide those details.

5 Q. Oh, oh.

6 A. Is that what you mean?

7 Q. No. That was a good question, sir. So I  
8 understand that you prepared figures and you used  
9 software that you disclosed to come up with graphical  
10 representations.

11 I'm wondering just as a -- as you lay out  
12 your scientific method and your analysis, were there  
13 any steps that you took that you decided, I'm not --  
14 I'm not going to disclose that?

15 A. Oh, no.

16 Q. What is a sensitivity analysis?

17 THE COURT REPORTER: Sensitivity?

18 MR. CURRAN: I'm sorry, sensitivity  
19 analysis.

20 THE WITNESS: Yeah. So sensitivity analysis  
21 is just what it is, is sometimes it's an analysis  
22 that someone can use to demonstrate maybe that a  
23 particular approach is not affected by a certain  
24 parameter or something like that.

25 ///



1 BY MR. CURRAN:

2 Q. In the context of air modeling, how do you  
3 conduct a sensitivity analysis?

4 A. Well, it depends. I mean, there's a lot of  
5 different ways to do it.

6 Q. What are some of the -- I'm sorry. What are  
7 some of the ways to conduct a sensitivity analysis in  
8 air modeling?

9 A. It could be, for example, for modeling, may  
10 mean multiple stacks and then -- so for annual  
11 averaging period, you end up modeling -- you compare  
12 it to modeling one stack and -- or two stacks and  
13 show -- you know, maybe demonstrate that the -- the  
14 difference between that -- those two scenarios is  
15 really not that significant. And you could -- then  
16 you could maybe save time in your approach with  
17 modeling fewer stacks or something like that.

18 Q. And are the steps that you took to conduct  
19 sensitivity analysis listed in your report?

20 A. I didn't really do a sensitivity analysis.

21 Q. What does it generally mean to validate an  
22 air model?

23 A. Well, the only way that I know of is to  
24 actually -- I mean, the -- the only thing that comes  
25 to my mind is actually go out and measure what the

1 model is predicting to actual, you know, sampling,  
2 measurement of concentrations, or a deposition or  
3 whatever and compare it to -- to the model results for  
4 a validation process.

5 Q. Did you conduct a validation process of the  
6 sort you just described in this case?

7 A. No.

8 Q. Were you aware of data that you could have  
9 used to conduct a validation of your model in this  
10 case?

11 A. No.

12 Q. Did you ask for any data that you could have  
13 used to validate your model in this case?

14 A. I did not.

15 Q. Are you aware of any soil sampling data of  
16 the area within -- well, strike that.

17 Are you aware of any soil sample data from  
18 Bennington to measure PFOA deposition?

19 A. Aware of it, maybe, yes, I guess, but I  
20 don't know a whole lot of details about the soil side  
21 of things.

22 Q. Are you aware of any well water data that  
23 measures PFOA concentrations in the Bennington area?

24 A. I mean, I know of the fact that there is  
25 measured PFOA in well water in the Bennington area.

1 Q. Did you attempt to use any of that well  
2 water data to validate your model?

3 A. And I did not, no.

4 Q. If we take a look at figure 8 to your  
5 report, that's figure 8 in Exhibit 1.

6 A. Yes.

7 Q. So taking a look at figure 8 of Exhibit 1.  
8 This represents deposition if ChemFab emitted your  
9 upper bound estimate, 10,000 pounds per year?

10 A. That is correct.

11 Q. Now, based on scale, can you tell me how --  
12 how much PFOA is your model estimating was deposited  
13 within the red area seen on figure 8?

14 A. Yeah -- oh, in this -- this contour right  
15 here?

16 Q. Yes, sir.

17 A. Just the red area?

18 Q. Yes, sir.

19 A. I didn't do an area summary of what the  
20 model ... I'm sorry. I didn't do an area summary of  
21 what's inside that contour to give you a -- so, sorry.  
22 I should have completed my answer.

23 Q. So this may be the same answer, though.

24 A. Okay.

25 Q. Just ask -- strike that.

1           Can you tell me how much PFOA your model  
2 estimates was deposited within the purple area on  
3 figure 8?

4           A.    And, again, I did not do an area summary.

5           Q.    The -- bad with colors, so this is kind of  
6 purplish --

7           A.    I struggled with colors.

8           Q.    Can I call this -- if I call this one pink,  
9 will you know what I'm pointing to?

10          A.    I got you, yeah.

11               MR. CURRAN: Gary, I'm pointing to -- I'm  
12 calling this purple and this pink.

13               MR. DAVIS: Okay.

14               MR. CURRAN: Okay. So strike that.

15 BY MR. CURRAN:

16          Q.    On figure 8, the outer boundary -- well, let  
17 me do this a little simpler. Strike that.

18               You have in front of you figure 8 from your  
19 report, and I want to understand geographically --

20          A.    Uh-huh.

21          Q.    -- the outer bounds of what you modeled. Do  
22 you think you could draw for me where the outer  
23 boundaries are for the model?

24          A.    What the extent of the -- the deposition  
25 rate is, total?

1 Q. Well, the -- the --

2 A. Or just this particular --

3 Q. The geographic boundaries of your modeled  
4 area, is that something you could draw on figure 8?

5 A. I mean, it's back on the figure that -- my  
6 receptor table figure, which is figure 3. That's my  
7 geographic boundary right there. That's my modeling  
8 domain.

9 Q. And so it extends well beyond --

10 A. Yeah, so it -- it may be zoomed in a little  
11 bit in this particular figure, yeah.

12 Q. Uh-huh. And so the -- the area that you  
13 have marked here --

14 A. Yeah.

15 Q. -- let me see if I can say this in a way  
16 that describes the visual. Strike that.

17 Figure 8 has a solid white line that forms a  
18 box --

19 A. Yeah.

20 Q. -- around some but not all of the areas that  
21 are shaded in purple in this figure?

22 A. That's right.

23 Q. And what is that solid white box that you've  
24 drawn?

25 A. So what I did basically was the base -- the

1 base drawing is a Google image, showing terrain and  
2 all that, and then I brought into it the -- the  
3 sampling area figure.

4 Q. Uh-huh.

5 A. So it's kind of a -- and I believe -- I  
6 don't know if the DEC developed this. I believe they  
7 did. So, yeah, it's Vermont's figure. So that's  
8 that -- so figure 4 over top of the Google Earth  
9 image, so it's -- the two are in there together as  
10 a -- as a base map, a base figure.

11 Q. Now, what determined the outer boundary of  
12 the pink area that you have shaded in figure 8?

13 A. It was just a selection of where to break  
14 down the contour intervals.

15 Q. Uh-huh, and the -- the contour ending  
16 here --

17 A. Yes.

18 Q. -- including along these --

19 A. Yeah.

20 Q. -- sort of jagged areas.

21 A. Right.

22 Q. Why do the contours end at that point in  
23 your model?

24 A. Well, the -- that's -- that's where the  
25 model -- of course, I had a 100-meter by 100-meter

1 receptor grid, so I used the Surfer software to -- to  
2 grid this data to produce the image that I've -- I'm  
3 presenting here.

4 So it's -- it's basically capturing -- you  
5 know, there's receptors there that -- that fall within  
6 this category of the -- it would be this 5 to the  
7 minus 4 contour interval, grams per meter squared per  
8 year.

9 Q. Uh-huh.

10 THE COURT REPORTER: Sorry, grams per?

11 THE WITNESS: Grams per meter. Sorry, grams  
12 per meter squared per year.

13 BY MR. CURRAN:

14 Q. Now, when you were looking at the different  
15 model outputs --

16 A. Yes.

17 Q. -- in figure 6, figure 7, and figure 8 of  
18 your report, did you attempt to validate any of those  
19 potential outputs with -- with soil or water data?

20 A. Yeah, no, I did not.

21 Q. Sir, do you understand -- well, strike that.

22 Do you have any understanding as to  
23 approximately how many residential properties are  
24 contained within the proposed class area in this case?

25 A. Actually, I do not.

1           Q.    Your model doesn't purport to tell us  
2 exactly how much PFOA was deposited over time at any  
3 specific property within that class area?

4           A.    No, no, I'm not focusing on a particular  
5 property.

6           Q.    And so your model doesn't tell us how much  
7 PFOA was deposited on a specific property in any given  
8 year?

9           A.    No.

10          Q.    Is it correct to say that your model  
11 predicts that each home within a certain contoured  
12 area on the map would have the same amount of PFOA air  
13 deposition. Fair?

14          A.    Okay. Repeat the question again.

15          Q.    Sure. Would it be correct to say that in  
16 your model, you're predicting that each home within a  
17 particular contoured area of the map would have the  
18 same PFOA air particle deposition?

19          A.    They're falling in the same range of that  
20 contour, so if they're closer to the next contour  
21 level, depending on which direction you go, that home  
22 would have less than one that's on the other side of  
23 that -- that contour, if you follow what I'm saying.

24          Q.    I do, yes. Thank you.

25          A.    Okay.



1           Q.     So your model would predict that as  
2     proximity from the site increases, the -- the contour  
3     of -- of deposition would generally decrease?

4           A.     That's right.

5           Q.     And --

6           MR. DAVIS: Let me object to that question.  
7     I think it was backwards, but that's okay.

8           THE WITNESS: Okay. Was it? The deposition  
9     rate --

10          MR. DAVIS: The proximity increases, you  
11     said. I'm sorry.

12          THE WITNESS: Yeah, the deposition decreases  
13     as you -- but he said that prop -- yeah, you're  
14     increasing distance.

15     BY MR. CURRAN:

16          Q.     So -- so your model -- and, again, I'm  
17     referring here to figure 8 for -- for colors. Looking  
18     at figure 8, your model predicts that a -- a home in  
19     the -- I guess it's the southwest corner of this  
20     purple -- this pink area --

21          A.     Uh-huh.

22          Q.     -- would receive as much PFOA air deposition  
23     as a home in the northeast corner of the pink area?

24          A.     Well, again, generally speaking, it's within  
25     the same contour, so it should be within that same

1 range. It's going to be -- it is going to be likely  
2 different, but, you know, that receptor -- those two  
3 receptors aren't going to be identical, but they're  
4 within that same decided contour interval.

5 Q. So your model doesn't distinguish between  
6 individual properties or receptors within this pink  
7 contour?

8 A. Well, I mean, technically it does.

9 Q. Uh-huh.

10 A. But I did not take the results to that  
11 extent, so, in other words, I've got -- you -- you see  
12 the domain, so -- so there's my model domain, so those  
13 calculations are done for every receptor in this  
14 domain. So if there's a -- if there's a receptor on a  
15 particular property that you're interested in, so,  
16 yeah, technically that data -- and, again, depending  
17 on -- we use the unit emission rate, depending on  
18 what -- what other three categories you want to look  
19 at. So, yes, it would look -- it would show you that  
20 the deposition rate --

21 Q. For a given --

22 MR. DAVIS: Excuse me. Let him finish. Did  
23 you finish here?

24 THE WITNESS: Yeah, I slowly finished it,  
25 so, yes, sorry.

1 BY MR. CURRAN:

2 Q. So for a given assumed emission rate, your  
3 contours treat a home in the southwest portion of this  
4 pink contour the same as a home in the northeast  
5 portion of this pink contour. Correct?

6 A. Yes, so they're falling within that same  
7 contour range, yes.

8 Q. Now, your model wasn't designed to tell us  
9 how much PFOA was deposited on property owned by a  
10 particular individual at a particular time?

11 A. No, I did not -- I did not take it to that  
12 extent.

13 Q. So you didn't create a model to tell us the  
14 source of PFOA deposited on property owned by, for  
15 example, James Sullivan. True?

16 A. Yeah, so, no, that's correct, that's not  
17 my -- was not my intent.

18 Q. And that would be true for any individual  
19 in --

20 A. Right.

21 Q. -- the Bennington area?

22 A. Right.

23 Q. And from your model, do you know when PFOA  
24 would have been deposited on each putative class  
25 member's property?

1           A.     When it's -- it's an annual average, so it's  
2     over the course of -- of an annual average period.

3           Q.     And so you computed an annual average?

4           A.     That's right.

5           Q.     You didn't attempt to determine when over  
6     time PFOA may or may not have actually deposited on to  
7     any given --

8           A.     No.

9           Q.     -- property in Bennington?

10          A.     No.

11          Q.     Do you know where the named plaintiffs in  
12     this case live?

13          A.     I do not.

14          Q.     Was that important for your analysis?

15          A.     No.

16          Q.     Did you look at PFOA levels at any of the  
17     named plaintiffs' properties in an effort to validate  
18     your model?

19          A.     I did not.

20          Q.     I'd like to mark as our next two exhibits,  
21     so it will be Exhibit 7 and 8, so I'll mark as  
22     Exhibit 7 an email dated February 22nd, 2017, and I'll  
23     mark as Exhibit 8 an image that is the attachment to  
24     that email.

25                   (EXHIBITS 7 AND 8 WERE MARKED FOR

1 IDENTIFICATION)

2 BY MR. CURRAN:

3 Q. Mr. Yoder, you've seen maps that indicate  
4 where PFOA was detected in water wells within  
5 Bennington. Correct?

6 A. Yes, and I used one in my figures.

7 Q. Okay. So Exhibit 16 is, I believe, an email  
8 between yourself, Mr. Hopke --

9 MR. DAVIS: Exhibit 16.

10 MR. CURRAN: I'm sorry. Exhibit -- I'm  
11 looking at the wrong one here. Exhibit -- strike  
12 that.

13 BY MR. CURRAN:

14 Q. Exhibit 7 is an email exchange between  
15 Philip Hopke, yourself, Ms. Dare --

16 A. Uh-huh.

17 Q. -- and Philip at TRM & Consultants.com. Can  
18 you tell me, who is Philip?

19 A. That's Phil Hopke, Dr. Hopke.

20 Q. Oh, okay. So he -- I see.

21 A. Yes.

22 Q. Got it. Okay. So this is an email -- so --

23 MR. DAVIS: Which one are we starting with?

24 BY MR. CURRAN:

25 Q. So Exhibit 7 is an email exchange between

1 Mr. Hopke, yourself, and Ms. Dare. Is that a fair  
2 characterization of the email?

3 A. Yeah.

4 Q. Okay. If I could direct your attention to  
5 Exhibit 8 for a moment. Does this appear, what has  
6 been marked as Exhibit 8, to be the Vermont DEC area  
7 of interest map that I believe Ms. Joselson sent to  
8 you in this email exchange?

9 THE COURT REPORTER: That I believe who sent  
10 to you?

11 MR. CURRAN: I'm sorry, Ms. Joselson,  
12 J-O-S-E-L-S-O-N.

13 THE WITNESS: It appears to be, but I think  
14 there -- I know there was a later version of  
15 this. It came out -- honestly, I looked at it  
16 quickly and didn't see a big difference for what  
17 I needed it for, so I don't know if this is the  
18 latest version or the earlier one when she  
19 distributed it.

20 BY MR. CURRAN:

21 Q. So we can agree this is representative of --

22 A. Oh.

23 Q. -- what you've seen of --

24 A. Yes.

25 Q. -- water well results?

1 A. Yes.

2 MR. DAVIS: And I'm going to object to the  
3 question. I don't know what "representative"  
4 means. If you --

5 THE WITNESS: Okay.

6 MR. DAVIS: You may agree or not.

7 THE WITNESS: Oh.

8 BY MR. CURRAN:

9 Q. Mr. Yoder, you are -- I'll direct you to  
10 your email on the bottom of page 1 of Exhibit 7.

11 A. Okay.

12 Q. You wrote this, I believe, in February 22nd,  
13 2017.

14 A. February, yes.

15 Q. Okay. And it says, Cathy, Phil, I'm curious  
16 about your initial thoughts on this map.

17 Pause there for a moment. Does this map  
18 appear to be -- that we marked as Exhibit 8 --

19 A. Okay.

20 Q. -- appear to be the map that you had in  
21 mind?

22 A. It appears to be. I'm not 100 percent sure,  
23 but it looks like --

24 MR. DAVIS: I'm going to object. It's  
25 obvious from this map that it's April of 2017 --

1 THE WITNESS: I didn't see that.

2 MR. DAVIS: -- not February where he's  
3 talking about it, so I object to you using this  
4 map with this line of questioning.

5 MR. CURRAN: Okay. Well, you know,  
6 we'll ...

7 MR. DAVIS: Actually -- actually, it says  
8 August at the bottom.

9 BY MR. CURRAN:

10 Q. Why don't we take a look actually down in  
11 the thread. I think you said earlier, Mr. Yoder, this  
12 is representative. The exact data points, you'll see,  
13 are not necessarily important.

14 A. Okay.

15 Q. We'll put that one to the side. In the  
16 email thread itself, there's a similar set on page 2  
17 of icons, looks like it's about the same legend, and  
18 references to sites.

19 A. Okay.

20 Q. Do you see that?

21 A. I do.

22 Q. So we can agree at least that this is  
23 representative of the type of map you were looking at  
24 when you were commenting up the thread about a map.  
25 Fair?



1           A.     Yes.

2           Q.     Okay. So in February 2017, when you're  
3 speaking to Dr. Hopke and Ms. Dare, you ask, (Reading)  
4 I'm curious about your initial thoughts on this map.  
5 Obvious impacts, but there are -- I believe that's  
6 non-detects -- also mixed in as well, even right next  
7 to the facility. I can see where local wind patterns  
8 may come into play, but it's hard to say not having  
9 looked at any met data.

10                   I believe that's meteorological data?

11           A.     Yeah.

12           Q.     Okay.

13           A.     Right.

14           Q.     (Reading) I guess I was expecting more of a  
15 clear, consistent pattern. What I see is mixed and  
16 very widespread.

17                   Can you explain what you meant by that?

18           A.     Well, this was -- when you asked earlier  
19 when I got started on -- this is back in February, so  
20 we started a lot earlier than I thought, so, yeah,  
21 this was way early on. And I was just starting to get  
22 some information and looking at things like that, but  
23 I hadn't had a chance to really process anything, so  
24 it was just kind of an initial, What do you guys think  
25 about this?

1 Q. Uh-huh.

2 A. That's about it. It really wasn't any more  
3 than that, and I don't even remember that they even --  
4 it really -- it didn't go any more, really, than past  
5 this, so.

6 Q. And when you were first looking at the data,  
7 you were expecting more of a clear, consistent pattern  
8 that there was air deposition. Right?

9 A. Well, I was just looking at those -- at  
10 these -- these wells. I was just curious; the first  
11 time I had seen that data, so. But I was just kind  
12 of, maybe trying to, in my brain, before having --  
13 having done anything, looking in that data or modeling  
14 or anything, just kind of see if there was some way  
15 from a -- before I did any analysis, if there was a  
16 logical fit just visually at the beginning.

17 Q. And understanding it was the beginning of  
18 the analysis.

19 A. Yeah.

20 Q. But your initial reaction to this was that  
21 it wasn't the clear, consistent pattern that you were  
22 expecting if this was purely air deposition. Correct?

23 A. It -- no, it was just saying it was -- it  
24 was -- I was mostly looking not so much at deposition.  
25 I was looking at the wind patterns and trying to line

1 it up with maybe what I thought, and having not even  
2 looked at anything, how it would play out.

3 But it really -- it really wasn't much more  
4 than just a, What do you guys think about this, 'cause  
5 it just, you know. And then I got into quite a bit  
6 more of it with the terrain and the river systems and  
7 things like that, so things kind of, you know, made  
8 more sense as far as its uniqueness.

9 Q. And your first reaction, though, was that  
10 you were expecting more of a clear, consistent pattern  
11 than you saw when you looked at data that had not only  
12 PFOA detects but also non-detects mixed in?

13 A. Yeah. It's -- it's -- and, again, a normal  
14 pattern is -- is based on, you know, typical south --  
15 well, eastern United States weather patterns. It's  
16 not typical there in Bennington.

17 Q. Now, looking at your model, going back to  
18 figure 8 in your report.

19 A. Yeah.

20 Q. Your model would not predict non-detects,  
21 for example, using your 10,000 pounds-per-year  
22 emission assumption.

23 A. Yeah.

24 Q. You would not predict non-detects in areas  
25 of purple or red or pink. Fair?

1           A.    No.  You're getting into an area of  
2    subsurface that I'm not familiar with.  I just  
3    predicted what was on the surface.  After that, I  
4    understand it's a pretty complicated situation, and, I  
5    mean, that's about all I can say about it.  I don't  
6    know what happens after it gets to the surface, after  
7    it's deposited.

8           Q.    When you were running your air model, did  
9    you consider any other sources of airborne PFOA that  
10   may have been in the area?

11          A.    I didn't know there was any other sources of  
12   PFOA in the area, so as far as I understood, there  
13   wasn't.

14          Q.    So -- so that's no?

15          A.    Yeah.

16          Q.    In running your air model, you did not  
17   consider any other sources of airborne PFOA --

18          A.    That's correct.

19          Q.    -- in the Bennington area?  And fair to say  
20   that your task in modeling was to model only where  
21   PFOA emissions might have traveled from the ChemFab  
22   facilities?

23          A.    That's correct.

24          Q.    You did not look at any individual property  
25   in Bennington as a receptor and then work backwards to

1 determine the source of any PFOA depositions at that  
2 property?

3 A. Kind of reverse engineering, I guess, yeah.  
4 No, we didn't do that.

5 Q. So you started with the conclusion that all  
6 the PFOA depositions came from ChemFab?

7 A. I mean, it -- it was the only source that I  
8 know of of PFOA, so yes.

9 Q. And you reviewed the -- strike that.  
10 You reviewed the Barr conceptual site model  
11 before you submitted your report. Correct?

12 A. Yes.

13 Q. You're aware that the Barr conceptual site  
14 model lists at least 11 other potential sources of  
15 PFOA emissions within the Bennington area. Right?

16 A. Of, I guess, some slight form of emissions  
17 of that particular compound. I'm trying to remember  
18 where I saw it now.

19 Q. Did you do anything to rule out those  
20 potential sources of PFOA as actual sources?

21 A. As far as I understood, there wasn't any  
22 other significant sources of PFOA from an air emission  
23 standpoint in -- in Bennington.

24 Q. And was your basis for that conclusion an  
25 independent investigation of other potential sources

1 of PFOA?

2 A. Well, it was based on -- yeah, it was based  
3 on reviewing that, and from what I understood, some of  
4 the historical, but operations around Bennington.

5 Q. How does your model account for non-airborne  
6 sources of PFOA?

7 A. It doesn't.

8 Q. So your model doesn't account for PFOA  
9 deposition on a property if that PFOA, for example,  
10 leached from a landfill?

11 A. No.

12 Q. In conducting your analysis on PFOA  
13 deposition, fair to say that you were told to use just  
14 one source?

15 A. I used one source because, again, it was the  
16 only source that I knew of as -- in my analysis in --  
17 of significant amounts of PFOA emissions in  
18 Bennington.

19 MR. CURRAN: Pass the witness.

20 MR. DAVIS: We're done.

21 THE VIDEOGRAPHER: This concludes the  
22 videotape deposition of Gary T. Yoder. We're off  
23 the record at 1:43 p.m.

24 (SIGNATURE RESERVED)

25 (DEPOSITION CONCLUDED AT 1:43 p.m.)

1 STATE OF NORTH CAROLINA  
2  
3 COUNTY OF FORSYTH

4 REPORTER'S CERTIFICATE

5 I, JUDY F. REINS, a Notary Public in and for  
6 the State of North Carolina, do hereby certify that  
7 there came before me on Tuesday, the 6th day of  
8 February, 2018, the person hereinbefore named, GARY  
9 THOMAS YODER, who was by me duly sworn or affirmed to  
10 testify to the truth and nothing but the truth of his  
11 knowledge concerning the matters in controversy in  
12 this cause; that the witness was thereupon examined  
13 under oath, examination reduced to typewriting under  
14 my direction, and the deposition is a true record of  
15 the testimony, to the best of my ability and  
16 understanding, given by the witness.

17 I further certify that I am neither attorney  
18 or counsel for, nor related to or employed by, any  
19 attorney or counsel employed by the parties hereto or  
20 financially interested in the action.

21 IN WITNESS WHEREOF, I have hereto set my  
22 hand, this the 19th day of February, 2018.

23 

24 JUDY F. REINS, RMR, CRR

25 Notary Public No. 20031970024

1 ACKNOWLEDGMENT OF DEPONENT

2  
3 I have read the foregoing transcript of  
4 my deposition and except for any corrections or  
5 changes noted on the errata sheet, I hereby  
6 subscribe to the transcript as an accurate record  
7 of the statements made by me.  
8

9 \_\_\_\_\_  
10 GARY THOMAS YODER, MS  
11

12 SUBSCRIBED AND SWORN before and to me  
13 this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
14

15  
16 \_\_\_\_\_  
17 NOTARY PUBLIC  
18  
19

20 My Commission expires:  
21  
22  
23  
24  
25





1	E R R A T A   S H E E T   C O N T I N U E D		
2	IN RE:   SULLIVAN, et al. vs. SAINT-GOBAIN		
3	DATE:   2/6/2018		
4	PAGE	LINE	CORRECTION AND REASON
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25	(DATE)	GARY THOMAS YODER, MS	

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[5 - agree]

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[agree - approach]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF SEPTEMBER 1, 2016. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

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